3 9999 06543 452 2

DOC
A
63

New England Regional Commission

Expanding the Region's Foreign Trade

November 1968

Prepared for the New England Regional Commission
By New England Economic Research Foundation

~~Property of BOSTON REDEVELOPMENT AUTHORITY Library~~

BOSTON PUBLIC LIBRARY

Expanding the Region's Foreign Trade

November, 1968

A Report Prepared for the
New England Regional Commission by
New England Economic Research Foundation
Boston, Massachusetts

This report was prepared by professional consultants under the supervision and direction of, and under contract with the New England Regional Commission. The statements, findings, and recommendations contained in the report are solely those of the consultants and do not necessarily reflect the views of the New England Regional Commission.

Digitized by the Internet Archive
in 2012 with funding from
Boston Public Library

http://www.archive.org/details/expandingregions00newe

Foreword

This report is one of a series of studies in economic and social development prepared for the New England Regional Commission by the New England Economic Research Foundation. The study, directed by the Commission staff, broadly surveys foreign trade in New England and makes recommendations to the Commission on public policy toward foreign trade.

The recommendations of the consultants are being given careful review and consideration by the Commission; however, they do not represent Commission policy. Before the Commission determines its policies in this area, consideration must be given to other relevant studies being conducted on the region's foreign trade. In addition, the alternative courses of action identified in the study do not necessarily exhaust all program possibilities.

The report is being published at this time in order to make available for public discussion much useful information and data on the region's foreign trade. The recommendations, however, are those of the consultants and do not represent Commission policy.

The Commission is a Federal-State entity, created pursuant to Title V of the Public Works and Economic Development Act of 1965. It is composed of a Federal Cochairman, appointed by the President with the consent of the Senate, and the Governors of the six New England states. The Commission is responsible for planning and carrying out regional economic and social development activities in New England.

John J. Linnehan

John J. Linnehan
Federal Cochairman

John W. King

John W. King
Governor of New Hampshire
State Cochairman

TABLE OF CONTENTS

CHAPTER 1 - INTRODUCTION

1.1. Growing Data Needs

1.2. Influence at the Policy Level

1.3. Data Scarcity

1.4. Foreign Economic Policy and New England

1.5. Varieties of International Economic Involvement

1.6. Data from Proportional Shares

1.7. Value vs. Volume

1.8. Limited Scope of Study

CHAPTER 2 - THE BASES OF EXTERNAL ECONOMIC RELATIONS

2.1. New England and the National Economy

2.2. Trade and the Resource Base

2.3. Which Types of Industries Export?

2.3.1. Export Concentration

2.4. Exporters are Desirable Residents

2.5. An Abbreviated Industrial Profile - New England and the U. S.

2.5.1. Intranational Industrial Rankings, By State and Industry

2.6. A Pattern of Industrial Diversity

CHAPTER 3 - NEW ENGLAND'S EXPORTS

3.1. A Preliminary Clarification

3.2. New England and The U. S., Export Participation by Establishment

3.2.1. Export Propensity and Size of Establishment

3.3. Export Oriented Industries

3.4. Exports/Establishment, by New England State and Industry Group

3.5. Export Totals and Statistical Mechanisms

3.6. New England and National Export Performance

3.7. Export Diversity

3.8. Regional Export Participation - Interstate Relationships

3.8.1. Massachusetts Exports of Manufactures

3.8.2. Connecticut Exports of Manufactures

3.8.3. Other New England States

3.9. Summary - New England and Manufactured Exports

3.10. Policy Implications of Manufacturing Export Position

3.11. The Exporter's Policy Interest

3.11.1. Mutual Liberalization vs. Mutual Obstruction

3.11.2. Export Propensities and Fiscal Responsibility

3.12. Export Expansion and New England

3.12.1. Current Export Performance Evaluated

3.12.2. Export Expansion - The Federal Program

3.12.3. Private Sector Efforts

3.12.4. Lack of Lasting Results

3.12.5. Faulty Premises Presumed

3.13. The Region's Developing Comparative Advantage

3.14. International Business Infrastructure

3.14.1. Information as Infrastructure

3.15. A Regional Economic Data Bank for New England

3.15.1. The Nature of Bank Deposits

3.15.1.1. New England Information

3.15.1.2. National and International Data

3.15.2. Public and Private Responsibilities

3.16. A Regional Authority is Needed

3.17. Two Interim Suggestions

3.18. Summary of Export Policy Recommendations

CHAPTER 4 - IMPORTS AND THE REGIONAL ECONOMY

4.1. The Economic Functions of Imports

4.2. Lack of Primary Data

4.3. Import Users and the Kennedy Round

4.4. Import Users in Greater Hartford

4.5. Import Competition

4.5.1. Import Competition in Greater Hartford

4.5.2. Federal Reserve Findings

CHAPTER 5 - PROSPECTS AND RECOMMENDATIONS

5.1. New England and the Kennedy Round

5.2. Some Concluding Policy Considerations and Qualifications

5.3. Summary of Findings and Recommendations

APPENDIX A - Selected Manufacturing Establishments Which Export, By State and Exported Products

APPENDIX B - Research Report on New England Manufacturers Export Practice and Potential, 1960, General Summary of Findings

LIST OF TABLES

Table 1 - Interregional Rank Orders, Manufacturing Employment, by Major Industry Group, 1954, 1958, 1963

Table 2 - Interregional Rank Orders, Value Added by Manufacture, by Major Industry Group, 1954, 1958, 1963

Table 3 - Manufacturing Employment and Value Added by Manufacture, Selected New England Industry Groups, 1958, 1963

Table 4 - Manufacturing Employment, Rank Orders and Percentage Shares, Ten Largest Industry Groups in New England, 1958, 1963

Table 5 - New England Region, Ten Leading Major Industry Groups, Ranked by Employment and Value Added by Manufacture, 1963, Including Regional Percentage Shares

Table 6 - Value Added by Manufacture, Rank Orders and Percentage Shares, Ten Largest Major Industry Groups in New England, 1958, 1963

Table 7 - Percentage of Regional Manufacturing Employment and Value Added by Manufacture, Ten Largest Major Industry Groups, By U. S. Region, 1963

Table 8 - New England Exporting Manufacturing Establishments, Reported Exports/Establishment by Region, State and Major Industry Group, 1960, 1963, 1966

Table 9 - U. S. Exports of Manufactures, 1960, 1963, 1966, Reported Exports as Percent of Total Estimated Exports, By U. S. Region

Table 10 - Reported U. S. Exports of Manufactures, Regional Totals and Percentage Shares, 1960, 1963, 1966

Table 11 - Reported New England Exports of Manufactures, State Totals and Percentage Shares, 1960, 1963, 1966

Table 12 - Estimated U. S. Exports of Manufactures, Regional Totals and Percentage Shares, 1960, 1963, 1966

Table 13 - Interregional Rankings, Estimated U. S. Exports of Manufactures, by Major Industry Group, 1960, 1963 1966

Table 14 - New England Region, Percentage Shares of Estimated Exports of Manufactures, by Major Industry Group, 1960, 1963, 1966

Table 15 - New England Region, Estimated Exports of Manufactures, 1966, Ten Leading Major Industry Groups, Rank Orders and Regional and National Percentage Shares

Table 16 - New England Region, Estimated Exports of Manufactures, 1960, 1963, 1966, Rank Orders and Regional and National Percentage Shares, By Major Industry Group

Table 17 - New England Region, Ten Leading Exporting Major Industry Groups, National Percentage Shares of Manufacturing Employment, Value Added by Manufacturing, Exports of Manufactures, 1963

Table 17A - New England Region, Ten Leading Exporting Major Industry Groups, Percentage Shares of U. S. Manufacturing Employment, Value Added by Manufacture, and Exports of Manufactures, 1963

Table 18 - New England Region, Exports of Manufactures, 1966, Ten Leading Industry Groups, With Regional and National Percentage Shares

Table 19 - New England Region, Estimated Exports of Manufactures State Totals and Percentage Shares

Table 20 - State of Massachusetts, Ten Leading Major Industry Groups, 1963, Manufacturing Employment and Value Added by Manufacture, Rank Orders and Percentage Shares

Table 21 - State of Massachusetts, Estimated Exports of Manufactures, 1966, Ten Leading Major Industry Groups, Various Value and Percentage Share Calculations

Table 21A - State of Massachusetts, Estimated Exports of Manufactures, 1960, 1963, 1966, Selected Metropolitan Areas, Totals and State Percentage Shares

Table 22 - State of Connecticut, Ten Leading Major Industry Groups, 1963, Manufacturing Employment and Value Added by Manufacture, Rank Orders and Percentage Shares

Table 23 - State of Connecticut, Estimated Exports of Manufactures, 1966, Ten Leading Major Industry Groups, Various Value and Percentage Share Calculations

Table 24 - State of Connecticut, Estimated Exports of Manufactures, 1960, 1963, Rank Order of Ten Leading Major Industry Groups

Table 25 - State of Connecticut, Estimated Exports of Manufactures Selected Metropolitan Areas, 1960, 1963, 1966, Value and Percentage Shares

Table 26 - New England Region, Estimated Exports of Manufactures, 1960, 1963, 1966, By State and Major Industry Group, Value and Percentage Shares

Table 27 - New England Region, Estimated U. S. Export Shares of Agricultural Commodities, By State, 1965-66

Table 28 - New England Region, Principal Estimated Agricultural Exports, By State

Table 29 - Employment, Production and Foreign Trade in Manufactures, Selected Industry Groups of Major Importance to New England, 1960, 1963, 1964, 1965

Table 30 - Kennedy Round Tariff Reductions on Imports Which Are Key Inputs for Major New England Industry Groups, by Commerce Department Industry Number

Table 31 - Measures of Import and Domestic Competition and Recent Tariff Level Changes, Selected Industry Groups in New England

CHAPTER 1 - INTRODUCTION

1.1. Growing Data Needs

The growing interest in the international economic relations of New England, as well as the Nation's other regions and states, represents a variety of concerns, social, political, and economic. This interest and these concerns, in turn, stem from the need of planners, analysts, and executives in both the public and private sectors to develop economic performance criteria to support their decisions and recommendations. Moreover, national legislators must have factual bases for their representation of the local interests which elected them when voting on matters of foreign economic policy. Legislators particularly need reliable information which permits them to choose wisely and fairly among the conflicting claims of the many interest groups making up their local constituencies.

These information needs are both absolute and relative. That is to say, there is a need for accurate data on regional international economic involvement. But more than this, it should be possible to compare New England's international economic relations with the Region's overall economic performance, and with the domestic and international achievements of the regions and states of the rest of the United States.

1.2. Influence At The Policy Level

The broad survey of New England's economic base and potential, of which this paper is but a small portion, is being undertaken to supply the New England Regional Commission (NERC) with a factual basis for economic policy positions which it may subsequently take in:

(a) Presenting the Region's cause in the forum of national policy, AND

(b) Recommending to the several states of the Region and to present and future interested interstate organizations such cooperative activities and projects as are in the regional interest.

Within this framework, the development of policy recommendations in the field of international economic relations suffers from a basic and major limitation.

The limitation is inherent in the fact that foreign policy in general, and foreign economic policy in particular, is reserved to the executive branch of the Federal Government so that the promotion of regional foreign policy interests must be confined to advocacy rather than direct action. The limitations inherent in this position would seem, on the basis of logic and precedent, to prevent the Region or its several states from taking measures specifically directed toward subsidizing, restraining, or regulating in any direct or indirect way, international trade and investment. However, some states within and without the Region have created international trade promotion offices and a locally-oriented "Buy American" bill was considered by the Massachusetts Legislature during the past year.[1]

A second limitation on the Region's public officials is that almost all regional international economic activity is carried on by private enterprises and individuals. These activities are ordinarily thought of as being outside the proper realm of government, at least in the context and traditions of the U. S. economy. There are conspicuous exceptions, of course, that include the ownership and operation of airport and seaport facilities. This does not contradict, however, our basic premise; i. e., that the direct implementation of most of our recommendations concerning international economic relations and policy will ordinarily be outside the scope of the activities of state and regional public agencies. This is significantly different, for example, from such fields as education, highways, environmental pollution or public housing which are acknowledged public responsibilities at the state and community level, or even rail and motor truck transportation, where regulation has traditionally limited very substantially the operational options of the private enterprises comprising these sectors. The fact that day-to-day operations are primarily private sector prerogatives is reflected in the recommendations put forth later, and accounts for the consistent emphasis in those recommendations upon public-private sector cooperation.

1.3. Data Scarcity

The reliance of NERC's initial research efforts, of which this paper is a part, upon already published data sources is both implicit in the short time allowed and explicitly stated in the background paper, Comprehensive Planning Study, issued in the Fall of 1967. The paper states

> A considerable body of information is available to establish an economic profile of New England and its sub-regions... what is required, accordingly, is an appraisal of current data...[2]

and later pages suggest some recent studies which may be fruitful sources of such published data.

Nearly ten years ago, in the introduction to another research report which attempted to supply the New England Region with some interview- and survey-derived statistics on exports of manufactures the author noted

> The harmonizing of local and national interests, always a problem in a federal system, has been particularly difficult in the field of trade policy because ... no agency, public or private, collects and publishes data on the exports or imports of any state or region.[3]

The decade just completed has seen but one significant oasis appear in the afore-mentioned data desert, namely, the U. S. Department of Commerce's surveys of the origin of exports of manufactures which supply data for the years 1960, 1963 and 1966.[4] None of the sources suggested by NERC as bases for statistical projections contains any of the data referred to in the quotation above, although some of the macroeconomic data contained therein have provided a useful frame of reference for our discussions. Our later recommendations spell out the kinds of information now so conspicuously lacking. But before considering those needs and shortcomings, an analytical framework must be created.

1.4. Foreign Economic Policy and New England

Although we have previously noted the political traditions which constrain local officials in international economic relations, we hasten to add that from the standpoint of economics, as opposed to politics, regional and national policy premises are not noticeably different. It is appropriate, in these preliminary pages, to note that the implementation of the international economic self-interest of the New England Region is by no means an onerous or thankless task. It requires no appeals for special consideration or dispensations, nor the political horsetrading and backscratching which minority groups must often take up in order to further their special and limited interests. We can clearly show, we believe, that those foreign economic policies which most disinterested analysts would support as being in the national interest are also those which will best serve the region. We speak to this issue more specifically in

1.5. Varieties of International Economic Involvement

We noted above that the New England Region's various governmental bodies are not ordinarily directly involved in international economic relations, although the Port and Turnpike Authorities sell some services to foreigners. Except for these and a few other rare cases, however, it is clear that the Region's international economic relations stem from the activities of New England-domiciled manufacturing, commercial and service enterprises, corporate and individual investors, non-profit institutions (hospitals, museums, universities, etc.) and, of course, its private citizens in their roles as tourists, donors to overseas charities, purchasers of securities, exotica, etc. More specifically, the following listings set forth the broad categories of such activities:

(a) Sales (exports) of U. S. goods and services to foreigners

(b) Purchases (imports) of foreign goods and services by Americans

(c) Investment abroad (capital outflow) and foreign investment here (capital inflow) via:

  (1) Purchases of securities (portfolio investment)

  (2) Technical assistance (patent licensing and "know-how" licensing

  (3) Purchase and building of facilities (direct investment)

  (4) Branch and subsidiary operations

The previously noted but unspecified data drought becomes manifest when we note that no comprehensive regional data are available from any source, public or private, with respect to any of the activities listed under (b) and (c) above.[5] Regarding (a) we have the previously mentioned special survey data for 1960, 1963 and 1966 on the origin of exports of manufactures. Some much cruder estimates are available on the exports of agricultural, mineral and fisheries products as noted below. No data exist regarding regional exports of personal services.

Specific fragmentary bits of information are available, of course, in many of these neglected areas. Some schools and colleges count their foreign students; banks submit data concerning foreign ownership of their demand and time deposits; some corporations publish in their annual reports lists of their foreign subsidiaries and the extent of their foreign investment exposure. But these data are not universally gathered, scientifically sampled nor widely published and, except for the lists published as Appendix A, will be relatively little use as we try to generalize about New England's international economic relations.

1.6. Data From Proportional Shares

A third, and even more remote, source of local international economic data, one which has been widely but not too wisely employed, is the so-called "proportional shares" technique. This method involves using national data totals and deductively allocating to each state and region some proportional share thereof, a share based upon that state or region's overall share of one or more of those economic aggregates (usually employment, value added by manufacture or, in rare cases, shipments) which presumably have some relation to the type of activity being measured. The data which we shall cite later concerning New England's estimated exports of agricultural commodities have been compiled in this manner. And whereas the U. S. Department of Agriculture publishes these as the best information available, it also warns that

> State shares ... are estimated mainly on basis (sic) of the state's contribution to the nation's output as shown by production and sales data.[6]

Previous research by the author has dealt at some length with the shortcomings of such data[7] and we need not dwell on them further at this time. We need only cite the general conclusion that such estimates have proven accurate only within a sixty-percentage-point range (30% above or below actual figures) for such activities as exports.

1.7. Value vs. Volume

We must also, in passing, make rueful reference to the fact that the voluminous statistics compiled by and for the various transportation agencies in the U. S. yield so little information about the value of goods shipped interregionally in the U. S. and from the hinterlands served by the seaports and airports. Origins and destinations data are rare and, where available, are incomplete. Secondly, whereas ports and carriers which serve them collect indigestible mountains of data on cargo tonnage and volume, their statistics generally ignore the value of the products which they handle. A shift in emphasis from operational statistics toward analytical data would aid regional economic analysis in at least two ways:

(a) First, knowledge of the Region's absolute and relative "exports" to the rest of the U. S., and of the more conventionally designated exports to the rest of the world, are among the best measures of New England's national and international competitive capability. However, it is the value of these rather than their bulk or weight which is of critical interest in such an appraisal.

(b) Second, one cannot judge the relative effectiveness of the different transportation modes unless it is possible to compare transport costs with the value of shipments, by mode and by commodity. Since the ultimate judgment as to how well the Region is endowed with and served by the several modes rests in large part on such data, their development and collection should be a matter of considerable interest.

1.8. Limited Scope of Study

Given the aforementioned limitations of the available primary data, and the inability to organize any significant, new statistical gathering programs within the time and funds allotted to this study, much of the analysis which follows must be more qualitative than quantitative, and more deductively conjectural than we would like. However, we have sought to extract from these limited data all of the conclusions and inferences which can reasonably be drawn, and to scrupulously differentiate speculative conclusions from those supported by hard facts. We have also, where possible, assigned degrees of probability to those findings according to the positions along the probability spectrum.

CHAPTER 2 - THE BASES OF EXTERNAL ECONOMIC RELATIONS

2.1. New England and the National Economy

The development of external economic relations by any U. S. state or region is essentially an outgrowth and, in some respects, a reflection of that area's economic strengths and weaknesses and of its economic structure overall. Within the U. S., significant differences have always existed among the various regions not only in terms of their specialization in different activities but in the regional per capita incomes produced. New England has always been among the economically favored regions of the U. S., having never failed to generate a per capita income at least 10% above the national average. Since 1920, our region has ranked third in the nation behind the Far West (coastal states plus Nevada) and the Mideast (N. Y., N. J., Penna., Del., Md.), with these three regions in 1960 producing respective per capita incomes of $2,537, $2,494, and $2,386 in constant (1957-59) dollars. Also, as the twentieth century has progressed, there has been a tendency for regional per capita incomes to diverge less and less from the national average. Consequently, as national per capita income has risen, regional divergences have been reduced from an average of 31% in 1900 to 13% in 1960, with New England's override of the national average having shrunk from 30% in 1900 to 11% in 1960.[8]

No general accounts are available which tabulate interregional trade or investment flows in the U. S., although intensive efforts now underway offer some hope of some improvement over the next decade. Thus we are left with inferential estimates based upon employment or value added by manufacture which, while more sophisticated than simple proportional shares analysis, are nevertheless conceded by their devisers to be less than satisfactory. One which is worth citing is the "Location Quotient" concept which ascribes to a regional industry an "exporting" function if that resident industry contributes a larger percentage of value added to the region's personal income than its parent industry group does to income in the U. S. overall.[9] A tabular presentation of this approach, based on 1962 data, predicts that New England's net intranational "exporting" industry groups would be those listed in Column 1 below. Column 2 rank orders those industries which actually led tha Region in international exporting for 1963, the nearest year for which data are to be had:

1	2
Leather & leather products	Nonelectrical Machinery
Textile mill products	Transportation equipment
Rubber and plastics	Electrical Machinery
Instruments & rel. products	Misc. mfg. & ordnance
Paper & allied products	Instruments & rel. products
Nonelectrical machinery	Chemicals & allied products
Electrical machinery	Fabricated metal products
Printing and publishing	Food and kindred products

That this technique identified five out of nine of the actual leading exporters is perhaps of some significance, although it is of limited importance to our study at best. As we shall see, the fact that a particular industry is unusually heavily represented in a Region's economy is no basis for predicting an international export orientation for this industry's establishments. It may, to the contrary, merely reflect a concentration in this locality of a protected industry which, far from having an export capability, survives even in its home territory because of being insulated from the competitive challenge of the international marketplace.

2.2. Trade and the Resource Base

Resources, or economic factor endowments, can conveniently be classified as to their physical availability throughout the world at some point along the following spectrum:

SCARCITY PLENTY

Uniquities Rarities Commonalities Ubiquities

Trade and investment flows can be regarded, therefore, as processes designed to redress the balances or imbalances created by nature and the industrial arts.[10] Utopia might be defined, from this resource viewpoint, as a place where all factor inputs were ubiquitous, allowing its residents a maximum amount of discretion as to which should be exploited and developed. Such an economic

Utopia would have no need to trade or invest since exploitation of its own super-plentiful resources would provide better opportunities for economic well-being than foreign markets or production sites.

In the real world, however, economic factor endowments (labor, capital, natural resources) vary greatly. The responsiveness of goods and services to trade incentives, and of capital to differential rates of return, is directly related to their relative scarcities. The most significant trade and investment flows are not associated with the world's commonalities and ubiquities. Essentially, each region trades with other regions and foreign countries as follows:

(a) It exports its desirable and economically portable rarities and uniquities

(b) It imports other areas' desirable and economically portable rarities and uniquities

A regional ability to produce in exportable quantities something which its potential customers regard as a desirable rarity or uniquity is usually related to natural resources (fossil fuels, mineral deposits, special climatic conditions) or, to a lesser extent, to special pockets of immobile labor which possess rare or unique skills. The industrial status of the New England Region in relation to the rest of the U. S. and the world as a whole provides an interesting example.

Most of New England is virtually devoid of industrial raw materials and is relatively remote from the centers of U. S. population. Yet, partly as a result of momentum from an early start, now largely spent, and advantages stemming from the availability of financial, educational and technological resources, the Region has continued to constitute a share of the nation's industrial capacity substantially in excess of its share of national population and natural resources. It is also true, however, that with relatively few exceptions New England's percentage share of the nation's population and economic activity continues the decline which has been noted ever since the U. S. began significantly to expand west of the Appalachians.

2.3. Which Types of Industries Export?

A region's or state's exporters ordinarily include the area's competitive elite, because exporting is a manifestation of exceptional competitive competence. Establishment size is also important, for the Region's reporting exporters in 1960 averaged 700 full-time employees, which was more than ten times the regional average for manufacturing establishments but still, as we shall see, much smaller than the typical exporting manufacturer in the other regions of the country.

The matter of size and export propensity was examined earlier by the author, and he found that 85% of a broad sample of establishments in exporting industry groups with annual sales of over $5 million were active export participants, and that these firms achieved more than 20% of their annual sales volume overseas. This export participation percentage, however, dropped to less than 30% for establishments with annual sales of $100-500,000, and these less active establishments also did only 9.0% of their annual business overseas.[12] Thus it seemed clear that not only were large firms more likely to export than smaller ones, but for the larger firms export sales were a larger fraction of total sales as well.

A common explanation of this correlation of size and export propensity holds that only in the larger firm are there likely to be found the skilled specialists and breadth of market intelligence which make possible successful selling in distant markets. Lest we conclude that size is the sole determinant, however, the same study also found, when trying to explain a lack of export activity by establishments which seemed otherwise well qualified:

> ... there is implicit in many of the answers a lack of aggressive sales promotion. If exporting were seriously attempted by only a few of the firms which responded that they had never considered it, or had no foreign requests for quotations, or didn't know how, ... considerable headway might be made...[13]

Thus size and managerial attitudes assume considerable importance as export determinants. In addition, export capability is often related to advanced technical or design capabilities which make a firm's product somewhat unique, or even from unusually aggressive marketing. It may also stem, of course, from some financial or administrative arrangement or from a conspiratorial monopoly, respectively, such as patent rights or market sharing, or from possessing through historic or geographic chance the total world supply of a uniquity or a large share of a rarity.

Whatever the root cause, whether some combination of the foregoing or something else, the exporting producers of a state or region are distinguished by their ability to bear the cost of shipping their products to foreign markets and still offer them for sale there at prices which compete with those of the local foreign producers, if any, and with those produced in third countries. This also favors export participation by establishments which produce items which combine high value in small bulk

2.3.1. Export Concentration

Another general finding of this and previous research is that those local industry groups which constitute a disproportionately small portion of the nation's productive capacity in their respective industries are not likely to be export originators, regardless of their location in the U. S. This is explained, we believe, by the fact that the more progressive and aggressive producing establishments in each industry group tend to cluster around whatever factors determine their most favorable location. Thus the more efficient, export-oriented producers will tend to be included in this geographical concentration rather than being proportionately scattered around the country wherever this industry group is represented. On the basis of this finding, therefore, we would expect for example that if the productive capacity of industry A were located 50% in Region 1, 10% each in Regions 2-5, and 5% each in Regions 6 and 7, we might expect Region 1 to originate all of that country's A exports, or very close to it, with minor amounts from 2-5, and none from 6 and 7.[14]

2.4. Exporters are Desirable Residents

Exports earn the cash and credits which enable a nation or region to pay for its imports. This is their essential economic function. So it is, then, that all national governments emphasize the need for their enterprises to export, and it is also true within an extensive continental economy such as ours that economies of scale tend to accrue only to those establishments which serve national and international, rather than local and regional, markets. For this reason alone, therefore, there is an understandable desire to attract into regions, states and local communities those establishments which both "export" to the rest of the nation and export to foreign countries.

In addition to these considerations, however, there are other factors more directly related to the wellbeing of community residents which make exporting firms desirable residents. Economic theory suggests that a nation or region should maximize its comparative advantage through concentrating on activities which stress the employment of large inputs of plentiful, cheap factors of production while economizing carefully in the use of scarce, expensive factors. In the U. S., capital and technology are the plentiful and relatively cheap factors while labor is the scarce and expensive factor. Thus, U. S. enterprises which are capital- and technology-intensive are ordinarily export-oriented and very profitable. What is more, their careful economizing of the scarce factor, labor, ordinarily means that labor productivity will be high, and that it will be possible to pay relatively high wages within the framework of this profitable operation.

The above theoretical premises are generally borne out by earnings and wage data for New England's exporting industry groups, although the data would be more convincing if they were available at the three- and four-digit SIC levels. Even so, it is noteworthy that average hourly wages in the top ten major industry groups which originated 89% of the Region's exports were $2.85, or 10% higher than the $2.60 of the ten least export-oriented groups. Similarly, with regard to profitability, manufacturing establishments in the top ten referred to above earned 24.95% on their invested capital (before taxes), whereas the least export-oriented ten earned 21.08%, or 18% less than their exporting counterparts.[15] In the interest of income maximization for the Region, other things being equal, a wise industrial development policy provides whatever special inducements and incentives are given as location bonuses to export-oriented establishments. At the other extreme, it should be noted that the three leading New England industry groups traditionally most closely associated with requests for protection against outside competition, Textiles, Leather and Apparel, paid an average hourly wage in 1967 of $2.12, only 75% of that of the leading exporters.[16] Contrary to our theoretical model, but perhaps significant in terms of appraising pleas for special consideration, is the fact that the latter two import-plagued groups earned over 23% on their investment before taxes in 1966, with Textiles somewhat less profitable at 16.7%. Thus, although all three do rather poorly by their workers, on the average, their investor-owners presumably do somewhat better.

The above general frame of reference should be used to evaluate the more specific discussion of export performance which follows.

2.5. An Abbreviated Industrial Profile - New England & the U. S.

New England's population in 1960, the year of the last complete census, was about 10.5 million, about 6% of the national total.

This percentage represented a decline from the 7% enrolled by the 1920 census, and the gradual decline has been rather consistent at about 0.3% per decade. This represents the fact that regional population growth in the four intercensus decades since 1920 has averaged 9.1%, whereas the national average has been 14.6%.[17]

The Region's percentage share of manufacturing employment in major industry groups (2-digit SIC) has shown a similar gradual decline, some of which represents industrial emigration (Textiles' share of industrial employment dropped from 1947's 21.5% to 10.5% of the regional total by 1966), but most of which represents the regional tendency to grow at rates somewhat slower than does the nation as a whole. Evidence of this is the Arthur D. Little finding that the only regional major industry groups which have maintained their relative percentage shares of the national industry over the twenty years since World War II have been, among the durables, (1) Stone, Clay and Glass Products, (2) Furniture and Parts and (3) Transportation Equipment. In the non-durables, only Leather and Leather Products and Miscellaneous Manufacturing have resisted the tide.

During these two decades, 1947-1966, the Region's overall share of U. S. durables manufacturing employment declined from 9.9% to 8.1%, but it should be noted that over 60% of this decline came in the 1947-56 decade, with widespread evidence that the Region's competitive edge sharpened considerably over the second decade.

In non-durables, however, the overall percentage decline over the twenty years was relatively greater (12.0% to 8.8%), and the number of percentage points lost was identical for each decade.[18]

Stated otherwise, since 1960 industrial employment in New England has lagged in most instances behind that of the U. S. as a whole. Where growth occurred nationally, New England's growth was less, barring the exceptions noted above;. where national declines were noted, New England's declines were greater.

Regarding value added by manufacture, which is a better measure of productivity than is employment, the picture is similar but of lesser degree.

Percentage Change In
Value Added by Manufacture

	1954-58	1958-63
All U. S.	21.0%	35.7%
New England	14.3%	30.1%

In each instance New England lags behind the national performance but it is clear that this difference in growth rates was reduced in the late 1950's and early 1960's, and there is reason to believe that this competitive resurgence has been maintained. This slowing of relative decline is also indicated by the fact that whereas the Region's share of total U. S. value added by manufacture dropped from 8.9% to 7.4%, 1954-1958, the 1958-1963 decline was significantly less, from 7.4% to 7.1%.

2.5.1. Intranational Industrial Rankings, By Region and Industry

The interregional rank orderings presented in Tables 1 and 2 confirm the foregoing generalities about regional industrial employment and value added by manufacture. They show that no New England-resident major industry group improved its rank order standing in employment vis-a-vis the other regions of the U. S. in the 1954-1963 decade, with the single exception of Transportation Equipment. Five lost ground, and the rest maintained their standings. In value added by manufacture, the same general picture appears except that none of the groups improved its standing, and five lost ground. For most industry groups, the Region's employment and value added rank order positions are the same.

As of 1963, then, New England's 5.9% of the U. S. population contributed 8.8% of the Nation's manufacturing employment and 7.1% of value added by manufacture, all three of which percentage figures having been subject to varying rates of decline during the years just preceding.[19]

As for individual major industry groups, Tables 1 and 2 also show that while ranking eighth among the nine Census Regions of the U. S. in total population, the New England Region ranked much higher in all industry categories. It led the Nation in employment and value added in Leather and Leather Goods, while ranking third in a number of significant heavy industries including Instruments and Related Products, Nonelectrical Machinery, Rubber and Plastics, Paper and Allied Products, Textile Mill Products and Miscellaneous

Manufacturing and Ordnance. A fourth-ranking position was held by Fabricated Metals and by Electrical Machinery. Between 1954 and 1958, the Region lost one place in the national interregional rankings in three major industry groups and, between 1958 and 1963, in three more. Only two groups gained ground, Furniture and Parts and Transportation Equipment.

At the industry group level (3-digit SIC), Table 3 shows that the Region's resident establishments constitute unusually large shares of national employment in such fields as Paper Mills (20.8%), Miscellaneous Rubber Products (18.0%), Cutlery, Hand Tools and Hardware (19.0%), Special Industry Machinery (18.6%), General Industry Machinery (14.2%), Office Machines (10.9%), Electrical Distribution Products (12.1%), Electronic Components (17.0%) and Mechanical Measuring Devices (18.1%). In most of these 3-digit groups, rank ordering of value added by manufacture is comparable to that of total employment. Exceptions are Textiles and Leather where, as previously noted, employment rankings are relatively high but low labor productivity brings the value added rankings down several rungs on the ladder.

2.6. A Pattern of Industrial Diversity

Among the Region's major industry groups (2-digit SIC), Electrical Machinery, which ranked third in employment in 1958 and second in value added by manufacture in that year, had by 1963 moved to the top position in both categories, with 11.3% of employment and

TABLE 1 - INTERREGIONAL RANK ORDERS, MANUFACTURING EMPLOYMENT, BY MAJOR INDUSTRY GROUP (2-DIGIT SIC), 1954, 1958, 1963

REGION	YEAR	SIC AND RANK ORDER NUMBERS																			
		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
New England	1954	7	6	3	4	7	2	2	6	8	9	3	1	7	4	3	3	6	3	3	3
	1958	8	5	3	5	7	7	3	6	8	9	3	1	8	5	4	3	3	6	3	3
	1963	8	6	3	5	7	6	3	6	8	9	3	1	8	6	43	3	4	5	3	3
Middle Atlantic	1954	2	2	2	1	6	2	3	2	1	3	2	2	2	2	2	3	2	3	1	1
	1958	2	2	2	1	6	3	4	2	1	3	2	2	2	2	2	2	2	3	1	1
	1963	2	3	2	1	6	3	4	2	1	3	2	2	2	2	2	2	2	3	1	1
East North Central	1954	1	4	5	3	4	1	1	1	2	2	1	3	1	1	1	1	1	1	2	2
	1958	1	NA	NA	4	4	1	1	1	2	2	1	3	1	1	1	1	1	1	2	2
	1963	1	4	4	4	4	2	1	1	2	1	1	3	1	1	1	1	1	1	2	2
West North Central	1954	3	NA	8	7	9	8	7	3	7	5	7	4	5	9	6	5	5	4	4	4
	1958	4	NA	NA	8	9	8	7	4	7	5	6	4	6	9	6	4	6	4	4	6
	1963	5	NA	7	8	9	8	7	5	7	5	7	4	6	8	6	4	6	6	5	6
South Atlantic	1954	5	1	1	2	2	3	4	5	3	7	5	6	3	3	5	8	8	5	6	6
	1958	5	1	1	2	2	2	2	5	3	7	4	5	3	3	5	7	5	5	5	5
	1963	4	1	1	2	2	1	2	4	3	7	5	6	3	3	5	7	5	4	6	5
East South Central	1954	8	8	4	5	4	5	8	8	4	8	6	5	8	5	7	7	7	8	8	8
	1958	7	3	6	3	3	5	8	8	4	8	5	6	7	6	8	8	7	8	7	7
	1963	7	2	8	3	3	5	8	8	4	8	6	5	7	4	8	8	7	8	8	7
West South Central	1954	6	5	6	8	5	7	6	7	5	1	8	7	6	7	8	6	6	7	7	7
	1958	6	4	4	7	5	6	6	7	5	1	7	7	5	7	7	6	8	7	6	8
	1963	6	5	6	7	5	7	6	7	5	2	8	7	5	7	7	6	8	7	7	8
Mountain	1954	9	NA	9	9	8	9	9	9	9	6	9	9	9	8	9	9	9	9	9	9
	1958	9	NQ	7	9	8	9	9	9	9	6	NA	9	9	8	9	9	9	9	NA	9
	1963	9	NA	9	9	8	9	9	9	9	6	9	9	9	9	9	9	9	9	9	9
Pacific	1954	4	7	7	6	1	4	5	4	6	4	4	8	4	6	4	4	4	2	5	5
	1958	3	6	5	1	4	5	4	6	4	NA	NA	8	4	4	3	5	4	2	NA	4
	1963	3	7	5	6	1	4	5	3	6	4	4	8	4	5	3	5	3	5	4	4

SOURCE: U. S. Census of Manufactures, 1954, 1958, 1963

TABLE 2 - INTERREGIONAL RANK ORDERS, VALUE ADDED BY MANUFACTURE, BY MAJOR INDUSTRY GROUP (2-DIGIT SIC), 1954, 1958, 1963

REGION	YEAR	SIC AND RANK ORDER NUMBERS																			
		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
New England	1954	7	5	3	4	8	5	4	6	8	9	3	1	6	6	4	3	3	6	3	2
	1958	8	5	3	4	8	6	4	6	8	9	3	1	8	6	4	3	3	6	3	3
	1963	8	5	3	6	8	6	5	6	8	9	3	1	8	6	4	3	4	6	3	3
Middle Atlantic	1954	2	NA	2	1	6	2	2	1	1	3	2	2	2	2	2	2	2	3	1	1
	1958	2	3	2	1	6	2	2	1	1	4	2	2	2	2	2	2	2	3	1	1
	1963	2	3	2	1	6	3	2	1	1	4	2	2	2	2	2	2	2	3	1	1
East North Central	1954	1	NA	4	2	3	1	1	2	2	2	1	3	1	1	1	1	1	1	2	NA
	1958	1	NA	NA	3	3	1	1	2	2	2	1	3	1	1	1	1	1	1	2	2
	1963	1	NA	4	3	3	1	1	2	2	2	1	3	1	1	1	1	1	1	2	2
West North Central	1954	4	NA	8	7	9	3	7	4	7	5	7	4	4	9	5	4	4	4	4	NA
	1958	4	NA	NA	7	9	3	7	4	7	5	6	4	5	9	5	5	6	4	4	5
	1963	4	NA	8	8	9	3	8	5	7	5	7	4	5	9	6	4	6	4	5	6
South Atlantic	1954	9	1	1	3	2	3	3	5	3	7	6	6	3	3	6	5	5	5	6	3
	1958	5	1	1	2	2	3	3	5	3	7	5	6	3	3	6	7	5	5	5	NA
	1963	5	1	1	2	2	2	3	4	3	7	6	6 3	3	3	5	7	5	5	6	5
East South Central	1954	6	2	5	6	4	6	8	8	5	8	5	5	7	5	7	7	7	8	8	5
	1958	7	2	4	6	4	5	8	8	5	8	4	5	7	5	8	8	7	8	7	6
	1963	7	2	5	4	4	5	7	8	5	8	5	5	7	4	8	8	7	9	9	7
West South Central	1954	5	4	6	8	5	7	6	7	4	1	8	8	5	7	8	6	6	7	7	4
	1958	6	4	6	8	5	7	6	7	4	1	7	8	6	7	7	6	8	7	6	NA
	1963	6	4	7	7	5	7	6	7	4	1	8	7	6	7	7	6	8	7	7	8
Mountain	1954	8	NA	9	9	7	9	9	9	9	6	NA	9	8	8	9	8	8	9	9	6
	1958	9	NA	7	9	7	9	9	9	9	6	NA	9	9	3	9	9	9	9	NA	7
	1963	9	NA	9	9	7	9	9	9	9	6	9	9	9	8	9	9	9	8	8	9
Pacific	1954	3	6	7	5	1	4	5	3	6	4	4	7	NA	4	3	NA	NA	2	5	NA
	1958	3	6	5	5	1	4	5	3	6	3	NA	7	4	4	3	4	4	2	NA	4
	1963	3	6	6	5	1	4	4	3	6	3	4	8	4	5	3	5	3	2	4	4

SOURCE: U. S. Census of Manufactures, 1954, 1958, 1963 and 12.2% of value added. Tables 4 and 5 list the ten leaders in both of these categories, which employed in 1963 66.4% of the Region's employees and contributed 73.0% of the value added. It is interesting that, in comparison with the last previous census year, 1958, these aggregate figures were trending in different directions. That is, from 1958 to 1963, the share of the Region's manufacturing employment provided by the leading ten major industry groups dropped by 8.7% from 73.8% to 66.4%, whereas in value added by manufacture, this same share was increasing by 1.7% from 71.8% to73.5%.[20]

The diversity of New England's manufacturing structure is indicated by the fact that these percentages are lower for this Region than for any other in the U. S. The average comparable figures for the other eight regions are 77.3% and 81.7% for employment and value added, respectively, and individual regional figures may be compared in Table 7. This diversity has both advantages and drawbacks. The obvious merit is to be found in the Region's lesser susceptibility to economic fluctuations which bear heavily on one or two industries, thereby making for stability in income and employment.

The drawback is closely related to the foregoing, in that this diversity means that the economy also contains significant portions of some of the poorly paying soft goods industries whose presence tends to depress wage averages in the Region.

TABLE 3 - MANUFACTURING EMPLOYMENT AND VALUE ADDED BY MANUFACTURE, SELECTED NEW ENGLAND INDUSTRY GROUPS (3-DIGIT SIC), 1958 and 1963

			EMPLOYMENT						VALUE ADDED					
SIC #	INDUSTRY NAME	YEAR	Rank in NE	% of N.E.	Total N.E. (000)	Total U.S. (000)	Rank in US	NE as % US	Rank in NE	% of N.E.	Total N. E. ($000)	Total U. S. ($000)	Rank in US	NE as % US
262	Paper Mills	1963	7	1.9	27	130	13	20.8	7	2.6	347	1,857	8	18.7
		1958	7	2.1	29	131	11	21.8	3	2.7	283	1,548	6	18.3
306	Rubber Products, NEC	1963	9	NA	NA	132	12	NA	NA	NA	NA	1,427	13	NA
		1958	8	1.7	24	120	13	19.9	9	1.9	201	997	13	20.2
329	Nonmetallic Mineral Products	1963	14	0.7	10	101	14	19.9	14	0.9	127	1,338	14	9.5
		1958	14	0.8	11	91	14	11.6	15	0.9	95	1,002	12	9.5
342	Cutlery, Hand Tools, Hdwre.	1963	8	1.8	26	137	9	19.0	6	2.6	353	1,706	10	20.7
		1958	6	2.2	30	136	9	22.0	5	2.5	259	1,202	11	21.5
349	Fabricated Metal Prod., NEC	1963	13	0.9	13	151	7	8.6	13	0.9	129	1,726	9	7.5
		1958	13	1.0	14	139	8	10.4	13	1.1	113	1,322	10	8.5
354	Metalworking Machinery	1963	4	2.8	40	259	4	8.6	3	3.1	426	3,038	3	14.0
		1958	2	2.9	39	234	3	16.7	2	2.9	302	2,058	3	14.7
355	Special Industry Machinery	1963	6	2.2	32	172	6	18.6	8	2.4	324	1,917	7	16.9
		1958	4	2.5	34	162	6	20.7	6	2.3	242	1,340	8	18.1
356	General Industrial Machinery	1963	5	2.3	33	233	5	14.2	4	2.8	384	2,813	4	13.7
		1958	5	2.5	33	211	4	16.3	4	2.8	280	1,935	4	14.4
357	Office Machines, NEC	1963	12	1.1	15	137	10	10.9	11	1.3	176	1,634	11	10.8
		1958	11	1.1	16	122	12	13.1	12	1.2	125	971	14	12.9
361	Electrical Distribution Prod.	1963	11	1.1	16	132	11	12.1	9	1.5	200	1,535	12	13.0
		1958	10	1.5	20	134	10	14.8	10	1.8	192	1,339	9	14.3
363	Household Appliances	1963	15	0.7	10	146	8	6.8	12	1.2	161	2,098	6	7.7
		1958	15	0.6	8	143	7	5.7	14	0.9	95	1,549	5	6.0
366	Communications Equipment	1963	2	3.5	51	477	2	10.7	2	4.2	565	5,341	2	10.6
		1958	9	1.7	22	234	2	9.5	8	2.3	229	2,274	2	10.1
367	Electronic Computers	1963	3	3.4	49	289	3	17.0	5	2.8	377	2,508	5	15.0
		1958	3	2.8	38	198	5	19.3	7	2.2	233	1,434	7	16.2
372	Aircraft and Parts	1963	1	5.5	79	679	1	11.6	1	6.3	860	7,867	1	10.9
		1958	1	5.3	69	765	1	9.0	1	5.9	585	6,924	1	8.5
382	Mechanical Measuring Devices	1963	10	1.2	17	94	15	18.1	10	1.4	190	1,112	16	17.1
		1958	12	1.1	15	76	15	19.7	11	1.2	127	716	16	17.7
386	Photographic Equipment	1963	16	0.4	5	65	16	7.7	15	0.6	82	1,270	15	6.5
		1958	16	0.3	4	60	16	6.1	16	0.6	59	789	15	7.5

TABLE 4 - MANUFACTURING EMPLOYMENT, RANK ORDERS AND PERCENTAGE SHARES, TEN LARGEST MAJOR INDUSTRY GROUPS (2-DIGIT SIC) IN NEW ENGLAND, 1958 AND 1963

SIC #	INDUSTRY NAME	MANUFACTURING EMPLOYMENT											
		1963 N.E. Rank	1963 % of N.E.	1958 N.E. Rank	1958 % of N.E.	1963 U.S. Rank	1963 % of U.S.	1958 U.S. Rank	1958 % of U.S.	1958 N.E. % of U.S.	1963 N.E. % of U.S.	1958 N.E. Rank in US	1963 N.E. Rank in US
36	Electrical Machinery	1	11.3	3	8.7	1	10.2	5	7.4	10.6	9.7	3	4
35	Nonelectrical Machinery	2	10.7	1	11.0	4	9.0	3	8.8	11.1	10.4	3	3
37	Transportation Equipment	3	7.9	5	7.3	3	9.9	2	10.1	6.4	7.1	6	5
22	Textile Mill Products	4	7.1	2	9.1	9	5.3	8	5.9	13.8	11.7	3	3
31	Leather & Leather Products	5	6.9	4	8.0	17	2.0	16	2.3	31.1	29.9	1	1
34	Fabricated Metal Products	6	6.5	6	7.1	7	6.7	7	6.9	9.1	8.5	4	4
23	Apparel & Related Products	7	5.9	7	6.5	5	7.9	4	7.7	7.5	6.6	5	5
20	Food & Kindred Products	8	5.3	9	6.3	2	10.1	1	11.1	5.0	4.6	8	8
27	Printing and Publishing	9	4.9	11	4.6	8	5.6	9	5.6	7.2	7.7	6	6
26	Paper & Allied Products	10	4.8	10	5.2	12	3.6	13	3.6	12.8	11.7	3	3

	1958	1963
Total Manufacturing employment in New England	1,400,000	1,425,000
Percent of Regional Total in Ten Largest Groups	73.8%	66.4%

Increase in Manufacturing Employment, 1958-1963

New England	1.8%
All U. S.	5.3%

SOURCE: U. S. Census of Manufactures, 1958 and 1963

TABLE 5 - New England Region, Ten Leading Major Industry Groups (2-digit SIC), Ranked by Employment and Value Added by Manufacture, 1963, With Regional Percentage Shares

	EMPLOYMENT		VALUE ADDED	
Major Industry Group	Rank	% NE Total	Rank	% NE Total
Electrical Machinery	1	11.3	1	12.2
Nonelectrical Machinery	2	10.7	2	12.1
Transportation Equipment	3	7.9	3	9.1
Textile Mill Products	4	7.1	7	5.4
Leather & Leather Products	5	6.9	12	4.0
Fabricated Metal Products	6	6.5	4	7.2
Apparel & Related Products	7	5.9	13	3.5
Food & Kindred Products	8	5.3	5	6.7
Printing and Publishing	9	4.9	8	5.2
Paper and Allied Products	10	4.8	6	5.8

SOURCE: U. S. Census of Manufactures, 1963

As was the case in the interregional and national comparisons, the divergencies between the employment and value added hierarchies within the Region result from the presence among the top ten employers of Textiles (4), Leather (5), and Apparel (7) which rank seventh, thirteenth, and fifteenth, respectively, in value added as noted below:

	REGIONAL RANKING	
Major Industry Group	Manufacturing Employment	Value Added by Manufacture
Above Average Labor Productivity		
Food and Kindred Products	8	5
Paper and Paper Products	10	6
Chemicals and Allied Products	15	12
Primary Metals Industries	13	9
Below Average Labor Productivity		
Textile Mill Products	4	7
Apparel & Related Products	7	15
Leather and Leather Products	5	13

TABLE 6 - VALUE ADDED BY MANUFACTURING, RANK ORDERS AND PERCENTAGE SHARES, TEN LARGEST MAJOR INDUSTRY GROUPS (2-DIGIT SIC) IN NEW ENGLAND, 1958 AND 1963

SIC #	INDUSTRY NAME	VALUE ADDED BY MANUFACTURE 1963 N.E. Rank	1963 % of N.E.	1958 N.E. Rank	1958 % of N.E.	1963 U.S. Rank	1963 % of U.S.	1958 U.S. Rank	1958 % of U.S.	1958 N.E. % of U.S.	1963 N.E. % of U.S.	1958 N.E. Rank in US	1963 N.E. Rank in US
36	Electrical Machinery	1	12.2	2	9.6	5	8.9	6	7.4	9.7	9.7	3	4
35	Nonelectrical Machinery	2	12.1	1	11.8	4	9.0	3	8.7	9.9	9.5	3	4
37	Transportation Equipment	3	9.1	3	8.2	1	11.9	2	10.7	5.4	5.6	6	6
34	Fabricated Metal Products	4	7.2	4	7.6	7	6.1	7	6.6	8.3	8.1	4	4
20	Food & Kindred Products	5	6.7	5	7.1	2	11.4	1	12.4	4.2	4.2	8	8
26	Paper & Allied Products	6	5.8	8	6.1	10	3.9	10	3.9	10.6	11.2	4	5
22	Textile Mill Products	7	5.4	6	6.7	9	4.1	9	4.2	12.1	14.5	3	3
27	Printing and Publishing	8	5.2	12	5.0	8	5.5	8	5.6	6.8	6.5	6	6
33	Primary Metal Products	9	4.7	10	5.0	6	7.9	5	8.1	4.2	4.5	6	6
30	Rubber and Plastics, NEC	10	4.6	11	5.0	13	2.4	13	2.3	13.4	15.9	3	3

	1958	1963
Total Value Added by Manufacture in New England	$10,439,964	$13,589,313
Percent of Regional Total in Ten Largest Groups	71.8%	73.0%

Percentage Increase in Value Added, 1958-1963

New England	30.2%
All U. S.	35.7%

SOURCE: U. S. Census of Manufactures, 1958 and 1963

TABLE 7 - Percentage of Regional Manufacturing Employment and Value Added by Manufacture Comprised by Ten Largest Major Industry Groups (2-digit SIC), by U. S. Region, 1963

	TEN LARGEST INDUSTRIES % SHARE OF	
Region	Manufacturing Employment	Value Added by Manufacture
New England	66.4	73.0
Middle Atlantic	72.8	80.9
East North Central	85.5	87.6
West North Central	78.2	84.7
South Atlantic	76.8	79.0
East South Central	75.0	76.1
West South Central	74.5	84.4
Mountain	80.6	83.6
Pacific	75.0	77.0
All U. S., Average	75.3	77.7

SOURCE: U. S. Census of Manufactures, 1963

CHAPTER 3 - NEW ENGLAND'S EXPORTS

3.1. A Preliminary Clarification

Two types of data are reported in the triennial Surveys of the Origin of Exports of Manufactures. The surveys report, first, the actual returns from the questionnaire enquiries sent to about 15,000 of the Nation's largest manufacturing establishments. These returns usually identify the state of origin of about 70% of the Nation's manufactured exports for that year. To make the total exports for all states coincide with the national totals, which are computed by other methods, the 30% of unreported exports are then allocated to the various states on the basis of two criteria:

(a) For those industry groups where survey returns accounted for two-thirds or more of the estimated national total for that group, each state is assigned a portion of the unreported remainder which bears the same percentage relationship to that unreported remainder as that state's reported exports of that industry's products bore to the reported total exports of those same products.

(b) In the industry groups where the reporting is relatively sparse, (less than one third of the national total) the unreported remainder is assigned among the several states on the basis of each state's percentage share of the total national employment for that industry group.

For those industry groups which fall between the extremes (i. e., where survey returns locate the origin of more than one-third but less than two thirds of the industry group's national totals), a combination of these two methods is used, but in what proportions the Census Bureau does not say.[21]

As a result of this statistical process, the analyst typically has available two sets of values for each datum as shown below:

Region or Area	Year	Exports of Manufactures ($ Mill)	
		Reported on Survey	Estimated Total After Remainder Allocation
All U. S.	1960	$ 9,792.4	$15,454.4
	1963	11,003.7	16,277.4
	1966	14,952.9	21,299.2
New England	1960	551.8	921.0
	1963	666.8	1,091.9
	1966	833.2	1,295.3

The discussion of regional export participation which follows deals with the values actually reported because it is only these totals which are relevant to the analysis of exports/establishment and participation by the reporting establishments. Since the remainder of the export values presumably are accounted for by establishments other than those responding to the surveys, any attribution of these unreported remainders to the survey respondents would be misleading in that it would inflate the extent of these establishments' participation. For our more general discussions of the Region's export role, however, including the separate section devoted to Massachusetts and Connecticut, the estimated totals are used. We try to differentiate these two sets of data carefully, referring to the survey response as reported exports and the larger sums as estimated exports, wherever there is the possibility of ambiguity.

3.2. New England and the U. S., Export Participation by Establishment

Table 8 shows that in 1960 New England had 721 manufacturing establishments, each with over 100 employees, which reported direct exports of over $25,000 for that year. In 1960, these establishments employed 482,000 workers, or about one-third of the Region's full-time industrial employees.[22] Although comparable employment data for these reporting establishments are not available for 1963 and 1966, there is little reason to believe that the regional growth of industrial employment at the rate of 1% per year, 1960-66, saw any major change in this ratio of exporting establishment employees to total industrial employment. Between 1960 and 1963, the number of establishments in New England reporting comparable quantities of direct exports increased by 4.4% to 753, while their reported export totals increased by about 20% from $551.8 million to $666.8 million. During this same period, in the U. S. as a whole, the total reported export activity increased by only 11.2%, so that the New England Region's reported export growth performance was substantially better than that of the nation as a whole.

TABLE 9 - U. S. Exports of Manufactures, 1960, 1963, 1966, Reported Exports as Percent of Total Estimated Exports, by U. S. Region

	REPORTED EXPORTS AS % ESTIMATED EXPORTS		
Region	1960	1963	1966
New England	59.9	61.0	63.9
Middle Atlantic	73.4	69.7	70.6
East North Central	74.7	73.6	75.5
West North Central	56.2	57.0	66.0
South Atlantic	51.9	56.4	61.5
East South Central	62.8	62.6	63.8
West South Central	76.5	74.1	73.1
Mountain	53.9	59.8	69.0
Pacific	65.4	63.1	70.1
All Regions	68.2	67.5	70.2

SOURCE: Surveys of the Origins of Exports of Manufactures, 1960, 1963, 1966

From 1963-66, export participation among New England manufacturers increased by 11.4%, over double the rate of increase of the previous three years, to include 841 establishments, or a 16.6% increase over the six-year period, but this fell considerably short of the six-year nationwide participation increase of 24%. The Region's reported export totals increased by about 25%, from $666.8 million to $833.2 million, 1963-66, compared with a nationwide reported increase of 35%. This failure to match the national growth rate during the second three-year period dropped New England's share of the nationally reported total, which had risen to 6.0% in 1963, back to 5.6% for 1966, the same percentage which had obtained in 1960. For the six-year period, 1960-1966, U. S.-reported totals grew by 52.6%, and New England's by 50.9%.

Another consequence of these percentage changes was that the reported value of exports/establishment from New England increased, 1960-1963, at a rate of about 40% above that of the 1963-66 period. Although there is no generally accepted index of export prices for the U. S., the 1960-63 increase of 15.5% in exports per reporting New England establishments from $770,000 to $890,000 probably included some expansion in the physical volume of exports as well as an inflationary offset through rising prices. Comparable data are not available at the national level.

3.2.1. Export Propensity and Size of Establishment

The previously noted gap between New England's reported exports/establishment in 1960 and that year's national average reflected the Region's failure to match the performance of any other Region in the country in this particular criterion:

REGION	EXPORTS/REPORTING ESTABLISHMENT
New England	$ 770,000
Middle Atlantic	1,199,000
East North Central	1,247,000
West North Central	864,000
South Atlantic	1,549,000
East South Central	1,051,000
West South Central	2,362,000
Mountain	1,456,000
Pacific	2,010,000
All U. S.	1,306,000

Although available data do not permit making comparable inter-regional examinations for 1963 and 1966, we do know that for the U. S. as a whole, exports/reporting establishment increased by 23.0%, 1960-66, whereas the New England increase over the same period was 28.5%. Although this narrowed the gap somewhat, exports/establishment in the U. S. overall were still 62.3% greater than in New England as of 1966 (the 1960 differential was 69.8%).

Also, in contrast to the 1960-63 interval, the New England increase in the value of exports/establishment, 1963-66, by 11.2% to $990,000 probably accomplished little more than keeping abreast of the (by then) more rapidly advancing inflation.

The discrepancy in export participation/establishment between New England and the U. S. as a whole tends to reflect interregional differences in sales/establishment more than it does the relative size of the establishments as indicated by total employment. For example, annual sales/reporting firm in 1960 were $2.2 million for the U. S. as a whole, and only $1.2 million for New England participants. This U. S./New England ratio of 1.8/1 is more compatible with the 1.7/1 exports/establishment relationship than the employment/establishment ratio of 1.3/1. However, both of these figures, it must be emphasized, indicate that the exporting manufacturer outside New England operates a much larger establishment than his New England counterpart. The only data which seem to contradict a general impression of greater export propensity outside New England than within show that in 1960 the New England exporter, on the average, sent a larger percentage of his total shipments abroad than did U. S. exporters as a whole, although the reported differential (6.2%, N. E.; 5.9%, U. S.) was not large. Comparable data are not available for 1963 and 1966.

TABLE 10 - Reported U. S. Exports of Manufactures, Regional Totals and Percentage Shares, 1960, 1963, 1966

	REPORTING YEAR					
	1960		1963		1966	
Region	% of U.S.	Total ($Mill)	% of U.S.	Total ($Mill)	% of U.S.	Total ($Mill)
New England	5.6	551.8	6.0	666.8	5.6	833.2
Middle Atlantic	23.2	2,271.2	22.4	2,458.0	20.6	3,068.7
East North Central	31.8	3,119.5	33.0	3,623.5	32.0	4,773.4
West North Central	3.9	378.6	4.1	459.3	5.5	823.7
South Atlantic	8.6	845.8	9.3	1,024.9	10.0	1,502.9
East South Central	3.3	324.9	3.3	370.8	3.9	583.2
West South Central	9.6	938.2	9.1	1,006.3	8.7	1,302.9
Mountain	1.0	97.6	1.2	136.0	1.5	221.3
Pacific	12.9	1,264.3	11.1	1,224.8	12.3	1,843.5
U. S. TOTAL	100.0	9,792.4	100.0	11,003.0	100.0	14,952.0

SOURCE: Surveys of Origin of Exports of Manufactures, 1960, 1963, 1966

3.3. Export Oriented Industries

Among the Region's exporting major industry groups (2-digit SIC) Stone, Clay and Glass Products, Transportation Equipment and Miscellaneous Manufacturing and Ordnance not only exceeded the national overall export propensities of their industries, but the member establishments in each of these groups were also more export oriented, on the average, than establishments in the same group located elsewhere in the U. S. in 1960.

At the industry group level (3-digit SIC), New England-resident establishments in each of the following groups not only substantially exceeded the overall national export propensity of 5.9% of sales, but were also more export oriented than their counterparts elsewhere in the U. S.:

INDUSTRY GROUP	Exports as % of Shipments, 1960	
	New England	All U. S.
Nonmetallic Minerals	6.7	4.4
Metalworking Machinery	15.3	14.8
Special Industry Machinery	18.4	15.3
Electrical Appliances	7.9	4.7
Mechanical Measuring Devices	12.2	7.9

3.4. Exports/Establishment, By New England State and Industry Group

Among the several New England states, significant differentials are to be noted in exports/reporting establishment, both on an interstate and interindustry basis. In fact, these two types of differentials are often one and the same; i.e., the principal interstate differentials are usually due to the industrial residence patterns which concentrate some of the most highly export-oriented industries in one or two states. We shall find some discrepancies, however, which cannot be explained in this manner.

From Table 8, the following hierarchy of export participation in 1966, by major industry group, can be determined:

MAJOR INDUSTRY GROUP	AVERAGE EXPORTS PER ESTABLISHMENT, 1966 $ Mill.)
Over $ 1 Million	
Transportation Equipment	$5.22
Instruments and Related Products	1.45
Nonelectrical Machinery	1.47
$500,000-999,999	
Stone, Clay and Glass Products	0.98
Chemicals and Allied Products	0.95
Electrical Machinery	0.79
Printing and Publishing	0.73
Paper and Allied Products	0.59.

Among the several states, the substantially above-average performance of establishments in Vermont ($1.63 mill/estab) and Connecticut ($1.16 mill/estab) can be attributed to the concentrated resi dence in those states of producers of Electrical and Nonelectrical Machinery (Vermont) and Transportation Equipment (Connecticut) which, as noted on the previous page, are among the most export-oriented of the Region's manufacturers. Those producers domiciled in those two states, moreover, are significantly more export-oriented than their fellow industry group members located elsewhere in the Region.

At the nether extreme, the far-below-average overall performance of Maine's exporters reflected the fact that, in the few industry groups where the State did have significant numbers of exporting establishments, their exports/establishment were far below the regional average for their particular industry group, as in Rubber and Plastics (0.17 vs. regional 0.39), Leather and Leather Products (0.29 vs. 0.47), Nonelectrical Machinery (0.28 vs. 1.47) and Transportation Equipment (0.83 vs. 5.22). It is also noteworthy that all of these groups except the last above-mentioned had regional export participation percentages which were well below the average of all industry groups in the Region. As a result, their effect on Maine's overall performance was too great to be offset by the two industry groups where performance in exporting did exceed the regional average (Paper and Allied Products, 0.70 vs. 0.59; Electrical Machinery, 0.83 vs. 0.79).

Maine was the only state which showed a decline in export participation per establishment in each of the last two triennial surveys.

TABLE 11 - Reported New England Exports of Manufactures, State Totals and Percentage Shares, 1960, 1963, 1966

	REPORTING YEAR					
	1960		1963		1966	
State	Total ($Mill)	% of N.E.	Total ($Mill)	% of N.E.	Total ($Mill)	% of N.E.
Maine	14.5	2.6	15.4	2.3	16.9	2.0
New Hampshire	30.3	5.4	21.6	3.2	26.3	3.1
Vermont	15.5	2.8	19.7	2.9	29.3	3.5
Massachusetts	224.4	40.6	324.5	48.6	385.2	46.2
Rhode Island	22.2	4.0	27.6	4.1	43.6	5.2
Connecticut	244.7	44.3	257.9	38.6	331.9	39.8
ALL NEW ENGLAND	551.8	100.0	666.8	100.0	833.2	100.0

SOURCE: Surveys of Origin of Exports of Manufactures, 1960, 1963, 1966

Connecticut and New Hampshire experienced slight and substantial declines, respectively, 1960-63, but recovered their momentum in the 1963-66 interval. For the six-year period, 1960-66, Vermont's per establishment participation increase of 150% far outstrips the growth of the second most growth oriented state, Rhode Island, where a 74% increase was recorded. Vermont, however, was the only state to experience a decline, paradoxically, in the total number of participating establishments over the six-year interval.

The data for each of the three surveys show that Massachusetts and Connecticut have within their borders nearly 80% of the reporting exporters, a percentage which is commensurate with their joint shares of the Region's manufacturing establishments, manufacturing employment and value added by manufacture.

Within the participating industry groups, Fabricated Metal Products, Electrical and Nonelectrical Machinery, Instruments and Related Products, and Miscellaneous Manufacturing and Ordnance regularly comprise about 65% of the participating establishments. Significant changes, 1960-66, in the numbers of participating establishments may be observed in Chemicals and Allied Products, Primary Metals Industries, Electrical and Nonelectrical Machinery and Transportation Equipment (above average increases); significant decreases in the numbers of export participants were noted in Fabricated Metal Products, Stone, Clay and Glass Products, and Paper and Allied Products.

3.5. Export Totals and Statistical Mechanics

The Export Origin Surveys of 1960, 1963, and 1966, respectively, received from their New England respondents in each survey year a reported export total which, in percentage terms, was a smaller percentage of the total eventually allocated to the Region than this percentage was in the U. S. overall. This meant that in 1960, for example, 40% of the total finally credited was allocated on the basis of some proportional shares technique previously discussed on pages 27 and 28. Although the percentage of this allocated share declined significantly, 1960-66, to 36.1% (Table 9), the remaining allocated portion is still large. Regarding particular industry groups, these unreported allocations are mostly in the soft goods areas such as textiles and apparel where manufacturing managements are often unaware of the eventual exportation of their products because of the separation of the production and marketing functions among different organizations. There is some evidence, too, that managements in some industry groups tend to be more suspicious of inquiries, from whatever source, and less responsive to data gathering efforts in general even when, as in the export origin surveys, response is supposed to be compulsory under legal penalties.[23]

Among other things, the fact that New England's allocated share has grown smaller through the years may be due to the declining importance in the economy of these non-reporting industry groups. This same phenomenon would also account for the difference between New England's national percentage share of the reported totals and estimated totals declining in each successive survey year (Tables 10 and 11).

3.6. New England and National Export Performance

Granting the above statistical frailties, then, and the reservations previously noted, let us proceed with the analysis. Whether the reported or estimated figures are used, it is clear that New England's percentage share of U. S. exports of manufactures is significantly below that share which might have been adduced on the basis of the Region's proportional share of U. S. manufacturing employment and value added by manufacture, as shown below:

Category	New England's Percentage Share of U. S. Total
Manufacturing Employment, 1963	8.8
Value Added by Manufacture, 1963	7.1
Reported Exports of Manufactures, Three-Survey Average	5.7
Estimated Exports of Manufactures, Three-Survey Average	6.4

Although the Region ranks fifth among the regions of the U. S. in manufacturing employment and value added, it drops to sixth in both the reported and estimated manufacturing export totals because of the extremely high export orientation of the petroleum and chemicals industries located in the West South Central Region. That Region, with less than 6% of the Nation's manufacturing employment and value added, accounts for between eight and nine percent of the reported and

TABLE 12 - Estimated U. S. Exports of Manufactures, Regional Totals and Percentage Shares, 1960, 1963, 1966

Region	1960 Total ($Mill)	1960 % of U.S.	1963 Total ($Mill)	1963 %of U.S.	1966 Total ($Mill)	1966 % of U.S.
New England	921.0	6.4	1,091.9	6.7	1,303.4	6.1
Middle Atlantic	3,092.4	21.6	3,526.4	21.6	4,341.9	20.3
East North Central	4,173.8	29.0	4,918.6	30.2	6,320.5	29.6
West North Central	672.8	4.6	804.7	4.9	1,247.2	5.8
South Atlantic	1,626.4	11.3	1,816.7	11.1	2,442.9	11.4
East South Central	517.3	3.6	592.3	3.6	913.5	4.2
West South Central	1,225.6	8.5	1,357.7	8.3	1,780.7	8.3
Mountain	180.8	1.2	227.4	1.3	320.6	1.5
Pacific	1,931.5	13.4	1,939.2	11.9	2,629.0	12.3
U. S., TOTAL	14,343.2	100.0	16,277.4	100.0	21,299.2	100.0

SOURCE: Surveys of Origin of Exports of Manufactures, 1960, 1963, 1966

TABLE 13 - INTERREGIONAL RANKINGS, ESTIMATED U. S. EXPORTS OF MANUFACTURES, BY MAJOR INDUSTRY GROUP (2-DIGIT SIC), 1960, 1963, 1966

REGION	YEAR	SIC AND RANK ORDER NUMBERS																				
		20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	20-39 TOTAL
New England	1960	8	6	3	4	7	7	5	4	7	8	3	1	3	8	3	3	3	4	3	4	6
	1963	8	6	3	5	7	7	5	4	7	8	3	1	5	8	3	3	3	4	3	4	6
	1966	9	5	3	4	3	4	5	4	8	8	3	1	4	3	5	4	4	5	3	4	6
Middle Atlantic	1960	5	3	2	1	6	3	4	1	1	2	2	2	1	1	2	2	2	3	1	3	2
	1963	5	3	2	1	6	3	4	1	1	2	2	2	2	1	2	2	1	3	1	3	2
	1966	5	3	2	1	6	2	4	1	1	3	2	2	2	1	2	2	2	3	1	2	2
East North Central	1960	1	4	5	3	4	2	6	2	4	4	1	3	2	2	1	1	1	1	2	2	1
	1963	1	4	5	3	4	2	6	2	4	4	1	3	1	2	1	1	2	1	2	2	1
	1966	1	4	5	3	4	1	5	2	4	4	1	3	1	2	1	1	1	1	2	3	1
West North Central	1960	4	5	8	7	9	8	8	6	8	5	6	4	5	9	8	4	5	6	5	5	7
	1963	4	5	8	7	9	8	8	6	8	5	7	4	4	9	8	4	6	6	5	5	7
	1966	4	6	8	8	9	6	8	5	7	7	7	4	5	9	8	3	6	4	5	6	7
South Atlantic	1960	6	1	1	2	2	1	1	3	3	6	6	5	4	4	5	7	6	5	6	6	4
	1963	6	1	1	2	2	1	2	3	3	6	6	5	3	4	5	5	5	5	6	6	4
	1966	6	1	1	2	2	7	1	3	3	5	5	6	3	5	6	7	5	6	6	5	4
East South Central	1960	7	2	4	5	3	5	3	8	5	NA	4	6	7	7	6	8	7	8	8	9	8
	1963	2	2	4	4	3	5	3	8	5	NA	4	6	7	7	7	8	8	8	8	9	8
	1966	7	2	4	5	3	3	3	8	5	6	6	5	6	7	7	8	7	7	9	9	8
West South Central	1960	2	NA	6	8	5	6	7	7	2	1	8	7	8	3	7	6	8	7	7	8	5
	1963	2	NA	7	8	5	6	7	7	2	1	8	7	8	5	4	7	7	7	7	8	5
	1966	2	8	6	7	5	5	7	7	2	1	8	7	8	4	4	6	8	8	8	8	5
Mountain	1960	9	NA	9	9	8	9	9	9	9	7	9	9	9	6	9	9	9	9	9	7	9
	1963	9	NA	9	9	8	9	9	9	9	7	9	9	9	6	9	9	9	9	9	7	9
	1966	8	NA	9	9	7	9	9	9	9	9	9	9	9	6	9	9	9	9	7	7	9
Pacific	1960	3	NA	7	6	1	4	2	5	6	3	7	8	6	5	4	5	4	2	4	1	3
	1963	3	NA	6	6	1	4	1	5	6	3	5	8	6	3	6	6	4	2	4	1	3
	1966	3	7	7	6	1	8	2	6	6	2	4	8	7	3	3	5	3	2	4	1	3

SOURCE: U. S. Department of Commerce, Surveys of the Origin of Exports of Manufactures, 1960, 1963, 1966 estimated exports, as shown in Tables 10 and 12. Although most of the interregional relationships remained rather stable throughout the three triennial export origin surveys, a noteworthy trend is the rapid growth of exporting, absolutely and relatively, in the West North Central Region, a trend which, if continued, would push New England down into seventh place by the time of the next scheduled survey, 1969.

Among the major industry groups (2-digit SIC), New England leads the nation in estimated exports of Leather and Leather Products, and achieves a third ranking in Textile Mill Products, Rubber and Plastics and Instruments and Related Products (Table 13). Fourth rank is held by Apparel, Furniture and Fixtures, Printing and Publishing, Stone, Clay and Glass Products, Nonelectrical and Electrical Machinery and Miscellaneous Manufacturing and Ordnance. With fourteen of the twenty major industry groups achieving a rank order standing higher than the Region overall, it would seem proper to attribute to the Region's manufacturers an export propensity commensurate with or somewhat greater than the Region's expected involvement, despite the apparently laggard performance implied by the averages cited on page 38.

Seeking our trends in the estimated figures, we note above-national-average growth, 1960-63 (84-100, N. E. Index change; 88-100, U. S.), but the reverse for 1963-66 (100-118, N. E.; 100-129, U. S.). For

TABLE 14 - NEW ENGLAND REGION, ESTIMATED EXPORTS OF MANUFACTURES, PERCENTAGE AND DOLLAR AMOUNTS OF CHANGE, 1960-1963 AND 1963-1966, BY MAJOR INDUSTRY GROUP (2-DIGIT SIC)

	MAJOR INDUSTRY GROUP NUMBER																			
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
1960-1963																				
Change in Export Index (1963=100)	30	--	-4	5	25	-14	20	19	-8	4	14	12	1	-2	16	14	46	0	22	13
Change in Value ($-Mill)	11.8	0	-1.4	0.5	2.3	-3.8	6.9	1.5	-3.7	0.1	4.6	2.9	0.2	-0.5	7.3	40.7	67.2	-0.4	19.4	12.6
1963-1966																				
Change in Export Index (1963=100)	-10	--	37	5	46	30	-8	59	31	100	15	-12	56	44	39	20	19	-1	62	3
Change in Value ($ Mill)	-12.0	0.6	8.0	2.3	3.1	0.8	3.9	5.8	13.3	1.6	3.9	-3.0	11.0	7.2	22.1	61.6	9.7	0.7	37.2	33.2

TABLE 15 - NEW ENGLAND REGION, PERCENTAGE SHARES OF ESTIMATED EXPORTS OF MANUFACTURES, BY MAJOR INDUSTRY GROUP (2-DIGIT SIC), 1960, 1963, 1966

	MAJOR INDUSTRY GROUP AND PERCENTAGE SHARE																			
YEAR	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
1960	2.9	0.0	3.5	1.0	0.8	0.2	2.9	0.7	5.7	0.1	2.9	2.2	1.6	2.3	4.0	26.3	8.4	18.1	6.9	9.1
1963	3.6	0.0	2.8	0.9	0.9	0.1	3.1	0.7	4.4	0.0	2.9	2.1	1.3	1.9	4.0	25.9	13.3	15.2	7.6	8.8
1966	2.0	0.0	2.9	0.9	0.9	0.2	2.9	1.0	4.7	0.1	2.7	1.5	1.9	2.1	5.0	26.4	11.8	12.8	9.2	9.9

SOURCE, TABLES 14 & 15, Calculated from Surveys of the Origin of Exports or Manufactures, 1960, 1963, 1966

TABLE 16 - New England Region, Estimated Exports of Manufactures, 1966, Ten Leading Major Industry Groups (2-digit SIC), in Rank Order With Regional and National Percentage Shares

SIC #	Industry Group	Rank in NE	EXPORTS OF MANUFACTURES, 1966 Value ($Mill)	% US Group Total	N.E. Rank in US Group	% NE Total
35	Nonelectrical Machinery	1	344.5	7.3	4	26.4
37	Transportation Equipment	2	167.5	4.9	5	12.9
36	Electrical Machinery	3	154.7	9.6	4	11.9
39	Misc. Mfg. & Ordnance	4	130.2	13.3	4	10.0
38	Measuring Instruments	5	120.5	15.2	3	9.2
34	Fabricated Metal Products	6	66.4	7.0	5	5.1
28	Chemicals & Allied Products	7	62.3	2.6	8	4.8
22	Textile Mill Products	8	39.0	11.6	3	3.0
26	Paper & Allied Products	9	37.8	6.3	6	2.9
30	Rubber and Plastics	10	36.2	10.7	3	2.8
	TOTALS		1,159.1			89.0

SOURCE: Export Origin Survey, 1966

the six-year period overall, the estimated U. S. total increased by 48.4% and that of New England by 41.5%, a differential which indicates a much more substantial regional lag of the U. S. performance than the comparable 52.6% and 50.9% figures which measure the same rates of growth of reported exports. In our judgment, the latter comparison is more realistic, because it deals more with the performance of the regional economy's growth areas (hard goods) whereas the former data are strongly influenced by the soft goods allocations.

3.7. Export Diversity

The most recent data (1966) credit some export originations to all of the twenty major industry groups of the Region. All except Tobacco and Tobacco Products exported over $ 1 million dollars worth and five (Electrical Machinery, Nonelectrical Machinery, Transportation Equipment, Instruments and Related Products, and Miscellaneous Manufacturing and Ordnance) exceeding the $120 million level. Table 17 provides intraregional rankings and other relevant calculations.

The ten leading major industry groups in 1966 accounted for about 89% of the total, and eight of these ten represented a percentage share of their parent industry's nationwide export total significantly higher than the Region's overall national share of 6.1% in that year. Other major industry groups in the second ten which exceeded the regional average included Textile Mill Products, Leather and Leather Products

TABLE 17 - NEW ENGLAND REGION, ESTIMATED EXPORTS OR MANUFACTURES, 1960, 1963, 1966, RANK ORDERS AND REGIONAL AND NATIONAL PERCENTAGE SHARES, BY MAJOR INDUSTRY GROUP (2-DIGIT SIC)

SIC #	INDUSTRY NAME	NEW ENGLAND'S EXPORTS OF MANUFACTURES											
		1960 Rank in NE	1960 N.E. Rank in US	1960 Value ($ Mill)	1960 N.E. as % U.S.	1963 Rank in NE	1963 N.E. Rank in US	1963 Value ($ Mill)	1963 N.E. as % U.S.	1966 Rank in NE	1966 N.E. Rank in US	1966 Value ($ Mill)	1966 N.E. as % U.S.
20	Food & Kindred Products	10	8	27.2	2.0	8	8	39.0	2.3	12	9	27.0	1.5
21	Tobacco & Tobacco Products	20	6	(A)	NA	20	6	0.2	(A)	20	5	0.8	(A)
22	Textile Mill Products	8	3	32.4	11.4	11	3	31.0	11.7	8	3	39.0	11.6
23	Apparel & Related Products	15	4	9.1	7.8	15	5	9.6	8.0	17	4	11.9	5.9
24	Lumber & Wood Products	16	7	7.2	4.7	16	7	9.5	4.9	16	8	12.6	4.4
25	Furniture and Fixtures	18	7	1.5	5.0	18	7	1.3	4.9	18	4	2.1	5.8
26	Paper & Allied Products	11	5	27.1	7.2	9	5	33.9	7.5	9	6	37.8	6.3
27	Printing and Publishing	17	4	6.1	4.6	17	4	7.6	4.5	15	4	13.4	5.2
28	Chemicals & Allied Products	6	7	52.7	3.1	6	7	49.0	2.6	7	8	62.3	2.6
29	Petroleum & Coal Products	19	8	0.4	(A)	19	8	0.4	(A)	19	8	2.0	(A)
30	Rubber & Plastics, NEC	9	3	27.7	12.6	10	3	32.3	13.5	10	3	36.2	10.7
31	Leather & Leather Products	13	1	20.5	37.2	12	1	23.4	38.5	14	1	20.4	33.8
32	Stone, Clay & Glass Products	14	3	14.5	8.4	14	5	14.7	7.4	13	4	25.7	9.1
33	Primary Metals Industries	12	8	21.6	2.0	13	8	21.1	2.5	11	8	28.3	2.6
34	Fabricated Metal Products	7	3	37.0	9.0	7	3	44.3	8.1	6	5	66.4	7.0
35	Nonelectrical Machinery	1	3	242.8	8.6	1	3	282.9	8.1	1	4	344.5	7.3
36	Electrical Machinery	4	3	77.8	8.5	3	3	145.0	12.0	3	4	154.7	9.6
37	Transportation Equipment	2	4	167.2	6.6	2	4	166.8	6.4	2	5	167.5	4.9
38	Instruments & Related Prod.	5	3	63.8	12.6	5	3	83.2	11.9	5	3	120.5	15.2
39	Misc. Mfg, & Ordnance	3	4	84.3	15.2	4	4	96.9	14.3	4	4	130.2	13.3
20-39	ALL GROUPS	--	6	921.0	6.4	--	6	1,091.9	6.7	--	6	1,303.4	6.1

(A) - Less than 0.1%

SOURCE: Surveys of the Origin of Exports of Manufactures, 1960, 1963, 1966

TABLE 17A - New England Region, Ten Leading Exporting Major Industry Groups, Percentage Shares of U. S. Manufacturing Employment, Value Added by Manufacture and Exports of Manufactures, 1963

SIC #	Industry Group	NEW ENGLAND'S PERCENTAGE OF U. S. Group Employment	Group Value Added	Group Exports
35	Nonelectrical Machinery	10.3	9.5	7.3
37	Transportation Equipment	7.1	5.4	4.9
36	Electrical Machinery	9.7	9.7	9.6
39	Misc. Mfg. & Ordnance	10.8	17.4	13.3
38	Instruments & Rel. Prod.	16.4	14.3	15.2
34	Fabricated Metal Products	8.5	8.3	7.0
28	Chem. & Allied Products	4.2	3.4	2.6
22	Textile Mill Products	11.7	12.1	11.6
26	Paper & Allied Products	11.7	10.6	6.3
30	Rubber and Plastics	15.7	13.4	10.7

SOURCES: U. S. Census of Manufactures, 1963
Survey of the Origin of Exports of Manufactures, 1963

and Stone, Clay and Glass Products.

In general the trends, 1960-66, in national percentage shares showed the same general direction as the interregional rankings previously noted; i. e., downward. Significant exceptions included Electrical Machinery, and Instruments and Related Products but even in these groups, the export shares did not show a significant increase in both of the later two surveys (Tables 14 and 15).

Table 17A, incidentally, lends statistical support to the earlier discussion regarding Location Quotients (page 12) and export propensity in that the Region's export leaders are, with only two major exceptions, major industry groups for which the regional percentages of residence criteria (employment and value added) are significantly above the Region's overall percentage share of these measures.

Among industry groups (3-digit SIC), New England's estimated share of the exports of nine of its ten leading groups (Table 18) is well above the Region's overall average export share. The dominant role in regional exporting played by the Transportation and Machinery groups at the 2-digit level (51% of regional total) is also reflected here at the 3-digit level, with seven of the ten leaders being sub-groups of these parents.

3.8. Regional Export Participation - Interstate Relationships

Among the six New England states, the dominance of Massachusetts and Connecticut of both the reported and estimated shares is the central fact, although in most instances this dominance is reflected more in the reported figures than in the totals which contain the allocated estimates

(Tables 11 and 19). Among the big two, it is interesting to note that even in 1960, when Connecticut's reported exports were well above those of Massachusetts, the Commerce Department's proportional attributions put Massachusetts in the lead in the estimated totals. That the two states' proportional shares of reported totals reversed this original relationship in both 1963 and 1966 probably reflects favorably upon Commerce's statistical techniques as well as the increasing role in the Massachusetts economy of the more technical and export-oriented industries. The growing shares previously noted for Vermont and Rhode Island are manifest in Table 19's estimates as they are in the reported shares totalled in Table 10. Nevertheless, the 1960-66 interim shows no significant change in the Massachusetts-Connecticut share of about 82%. It may be evidence of industrial stability or merely a statistical coincidence that an earlier survey of 169 establishments by the author covering the years 1954, 1956 and 1957[24] turned up a Mass-Conn export percentage share which varied by only 0.2% from that resulting from the 1966 survey of 853 establishments. Whatever the case, it is clear that the increased shares of regional exports gained by Vermont and Rhode Island were at the expense of Maine and New Hampshire's declining shares, although only Maine was allocated successively smaller percentage shares by both the 1963 and 1966 surveys.

3.8.1. Massachusetts Exports of Manufactures

The previously noted diversity of New England's industrial structure

TABLE 20 - State of Massachusetts, Ten Leading Major Industry Groups (2-digit SIC), 1963, Manufacturing Employment and Value Added by Manufacture, Rank Orders and Percentage Shares

		MASSACHUSETTS MANUFACTURING			
		Employment		Value Added	
SIC #	Industry Group	% of State	Rank in State	% of State	Rank in State
36	Electrical Machinery	14.2	1	15.4	1
35	Nonelectrical Mach.	10.1	2	11.1	2
23	Apparel & Rel. Prod.	8.3	3	5.1	8
31	Leather & Leath. Prod.	7.3	4	4.8	11
22	Textile Mill Products	6.1	5	4.9	10
20	Food & Kindred Prod.	6.1	6	7.9	3
27	Printing & Publishing	6.0	7	6.9	5
34	Fabricated Metal Prod.	5.9	8	7.0	4
26	Paper & Allied Prod.	5.2	9	5.6	6
30	Rubber & Plastics	5.0	10	5.1	9
	TOTALS	74.2		73.8	

Total Manufacturing Employment, 1963, 674,023
Total Value Added by Manufacture, 1963, $6,403,789

SOURCE: U. S. Census of Manufactures, 1963

stems in large part from the patterns of industrial residence in Massachusetts. The shares of total manufacturing employment and value added represented by the State's ten leading major industry groups (Table 20) are among the lowest of all leading industrial states, and have been stable at about 75% for the past three Censuses of Manufactures. Important shifts noted between the 1958 and 1963 Censuses include a growing role for Electrical Machinery (from 11.1% to 14.2% of state employment), the rank order swap of the Leather and Apparel groups, and the fact that relative declines in these two groups and in Textiles and Food Products as well reduced the state employment share of these four from 33.7% to 27.8%. Miscellaneous Manufacturing dropped out of the top ten, to be replaced by Rubber and Plastics. In general, Massachusetts accounts for about 4% of the Nation's economic and industrial aggregate measures.

The $603.6 million of manufactured exports estimated for Massachusetts for 1966 was 2.8% of the national total and ranked twelfth among the states of the U. S., having dropped one place in rank since 1960. In 1960, 204,500 workers, or about 30% of the State's manufacturing employees, were employed by establishments which reported over $25,000 in direct exports for that year. Although comparable data are not available for 1963 and 1966, the similarity in the industry shares reported through the years makes it unlikely that this percentage has varied much. Between 1960 and 1966, the State's estimated share of the national manufactured export total dropped from 4.3% to 2.8% despite the

TABLE 21 - State of Massachusetts, Estimated Exports of Manufactures, 1966, Ten Leading Major Industry Groups (2-digit SIC), Various Value and Percentage Share Calculations

				EXPORTS OF MANUFACTURES, 1966			
SIC #	Industry Group	Value ($ Mill)	% of U.S. Group	% of State Group Sales	Rank in State	% of State Total	Group Rank in US
35	Nonelectrical Machinery	183.4	3.9	13.7	1	30.4	1
36	Electrical Machinery	84.6	5.3	4.8	2	14.0	5
38	Instruments & Rel. Products	76.9	9.7	11.3	3	12.7	9
39	Misc. Mfg. & Ordnance	53.4	5.5	10.7	4	8.8	7
34	Fabricated Metal Products	30.2	3.2	3.4	5	5.0	8
28	Chemicals & Allied Products	24.6	1.0	3.6	6	4.1	3
30	Rubber and Plastics	21.1	6.3	3.1	7	3.5	13
32	Stone, Clay & Glass Products	20.6	7.3	7.3	8	3.4	16
26	Paper and Allied Products	18.9	3.2	2.2	9	3.1	10
22	Textile Mill Products	18.4	5.5	2.2	10	3.0	14
	TOTALS	532.1				88.0	

SOURCE: Survey of Origin of Exports of Manufactures, 1966 fact that the number of firms in the State reporting significant export activity increased over the same six-year period by 21%, very nearly equal to the national average of 24%, and significantly above the New England regional average of 17% (Table 8).

This may signify what it seems to; i. e., that growth of exports per establishment lagged substantially behind the national average over the six-year period. Something like this could be concluded from the fact that reporting establishments in the State reported no increase in exports/establishment between 1963 and 1966. Another more probable contributor to this decline in national share, however, is the phenomenon we noted earlier in our discussion of the Region's overall export performance; namely, that the State's national residence share of the Textile and Apparel groups, where exports are geographically allocated entirely by employment shares, has been declining and so, consequently, has the amount of these groups' national exports allocated to it. Stated otherwise, the 1960 data probably overestimated the Massachusetts share and the 1966 estimate is probably closer to reality.

The listing of the State's leading exporting major industry groups (Table 21) produces two noteworthy relationships which may be a bit surprising in view of the earlier discussion of industrial structure. The first is that general industrial diversity does not carry over to industrial exports, for the machinery and instruments groups comprise 57% of the State total. The second is that although the Electrical Machinery group has surged out in front as the State's leader in employment and value added, it is the Nonelectrical Machinery group which leads the exporting list with over 30% of the State total, over twice that of second-ranked Electrical Machinery (14.0%). This greater export orientation in the nonelectrical group was also reflected in reported exports/establishment (Table 8) where the nonelectrical group just about doubled the electrical group's performance, and in the much greater share of export sales in total sales.

As might be expected, these ten leading export groups are much more export oriented than the State's exporters as a whole, compared with other members of the same industry groups located elsewhere in the U. S. Only the Chemicals group among the leaders failed to exceed the State's overall percentage figure of 2.8% of the national totals.

Among the three most active exporting major groups, there has been relatively little change in their State shares, and no change in their rank ordering, since 1960. Farther down in the ranks, Textile Mill Products has dropped to tenth rank from fourth primarily, we believe, for the statistically technical reasons previously discussed. The Food group and Leather Group, ranked ninth and tenth in 1960 totals, dropped from the list to be replaced by Stone, Clay and Glass Products and Paper and Allied Products, respectively. Fabricated Metal Products advanced from eighth to fifth, and Miscellaneous Manufacturing moved up to fourth. Table 26 gives complete details.

Within the State, the Boston Metropolitan Area is credited with a large share of the State's export originations, although the triennial

TABLE 21A - State of Massachusetts, Estimated Exports of Manufactures, 1960, 1963, 1966, Selected Metropolitan Areas, Totals and State Percentage Shares

	ESTIMATED EXPORTS OF MANUFACTURES					
	1960		1963		1966	
Metropolitan Area	Total ($ Mill)	% of State	Total ($ Mill)	% of State	Total ($ Mill)	% of State
Boston	88.0	20.2	168.4	32.0	173.9	28.8
Worcester	42.2	9.6	37.0	7.0	40.2	6.6
Springfield	NA	NA	26.8	5.0	31.6	5.2

SOURCE: Surveys of Origin of Exports of Manufactures, 1960, 1963, 1966

changes are of such a size and pattern that it is not possible to ascribe any "normal" percentages nor to discern any clear trends. Boston's share jumped from 20.2% in 1960 to 32.0% in 1963, but regressed to 28.8% in 1966. The trend is probably upward, but we need one or two more surveys to confirm this. (Table 21A)

The Metropolitan Worcester area's 9.6% share for 1960 has been reduced in each of the subsequent surveys, despite some extensive export promotion efforts which we discuss later in the chapter. This seems clearly related to a decline in machinery exports, a factor which is contrary to the State and regional pattern. Statistics became available for the Springfield area for the first time in 1963, and showed a 5% share with Chemicals and Nonelectrical Machinery the two largest contributors. This share was relatively stable, 1963-66. Appendix A lists a representative sample of the State's exporting establishments.

3.8.2. Connecticut's Exports of Manufactures

Connecticut's industrial structure is neither exceedingly concentrated nor diversified by comparison with the leading manufacturing states of the U. S. On the one hand, its employment and value added by manufacture are more concentrated in its top ten major industry groups than in Massachusetts (80% vs. 75%), but the concentration is not at all comparable to that of such states as California, Michigan or Washington, for example. One unusual feature is that among the State's ten leading major industry groups (Table 22), the top five were identically rank ordered in 1963 with respect both to manufacturing employment and value added

TABLE 22 - State of Connecticut, Ten Leading Major Industry Groups (2-digit SIC), Manufacturing Employment and Value Added by Manufacture, 1963, Rank Order and Percentage Shares

		CONNECTICUT MANUFACTURING			
		Employment		Value Added	
SIC #	Industry Group	% of State	Rank in State	% of State	Rank in State
37	Transportation Equipment	20.3	1	20.0	1
35	Nonelectrical Machinery	14.1	2	15.2	2
36	Electrical Machinery	10.3	3	10.8	3
34	Fabricated Metal Prod.	9.5	4	9.4	4
33	Primary Metals Industries	6.2	5	7.2	5
27	Printing and Publishing	4.1	6	3.9	9
30	Rubber and Plastics	4.1	7	3.8	10
38	Instruments & Rel. Prod.	4.0	8	4.0	8
39	Apparel & Rel. Products	3.9	9	2.2	13
39	Misc. Mfg. & Ordnance	3.8	10	4.2	7
	TOTALS	80.3		80.7	

Total Manufacturing Employment, 1963, 419,412
Total Value Added by Manufacture, 1963, $4,495,878

SOURCE: U. S. Census of Manufactures, 1963

by manufacture, a condition which extended through the top six in 1958, and which at that earlier time was true of no other industrial state in the U. S.

In the 1958-63 Manufacturing Census interim, the Transportation group increased its leading percentage share of the Connecticut manufacturing establishment from 18.6% to 20.3% in employment, with a comparable gain in value added. A two-percentage-point jump in employment share was sufficient to move the Electrical Machinery group from fourth to third ranking above Fabricated Metal Products. A newcomer to the 1963 list was Printing and Publishing which rose from eleventh to sixth rank and Rubber and Plastics seventh ranking was up two places from ninth. Miscellaneous Manufacturing dropped from sixth to tenth and Textile Mill Products dropped out of the top ten. In the broader context, Connecticut accounts for about 2.5% of the Nation's employment and value added, a percentage which has changed but little in recent years.

In exports, as well as general industrial structure, Connecticut is more concentrated than Massachusetts, with the top ten exporting major industry groups (2-digit SIC) accounting for 96% of the State's total, compared with 88% for Massachusetts, in 1966. In 1960, 213,000 full-time workers, or about 53% of the State's industrial labor force, were employed full-time in the 250 manufacturing establishments which reported over $25,000 of exports for that year. Although comparable

TABLE 23 - State of Connecticut, Estimated Exports of Manufactures, 1966, Ten Leading Major Industry Groups (2-digit SIC), Various Value and Percentage Share Calculations

				EXPORTS OF MANUFACTURES, 1966			
SIC #	Industry Group	Value ($ Mill)	% of U.S. Group	% of State Group Sales	Rank in State	% of State Total	Group Rank in US
37	Transportation Equipment	152.2	4.4	8.1	1	32.4	2
35	Nonelectrical Machinery	93.9	2.0	8.0	2	19.9	1
39	Miscellaneous Mfg. & Ordnance	46.3	4.7	8.3	3	9.9	7
38	Instruments & Related Products	37.9	4.8	11.5	4	8.1	9
36	Electrical Machinery	34.0	2.1	4.1	5	7.2	5
34	Fabricated Metal Products	32.2	3.4	3.9	6	6.9	8
28	Chemicals & Allied Products	30.5	1.3	5.3	7	6.5	3
33	Primary Metals Industries	11.1	1.0	1.0	8	2.4	6
22	Textile Mill Products	6.4	1.9	2.3	9	1.4	18
30	Rubber and Plastics	6.2	1.8	1.8	10	1.3	13
	TOTALS	450.7				96.0	

SOURCE: Survey of Origin of Exports of Manufactures, 1966 employment data are not available for 1963 and 1966, there is no reason to believe that this percentage figure has changed significantly over the years. As was the case in Massachusetts, Table 23 shows that exports of manufactures are considerably more concentrated by industry group than is industrial activity generally, with the four major groups which account for about 55% of employment and value added originating over 70% of the State's manufactured exports. Comparable percentages for Massachusetts were 36.4% and 65.9%.

Comparison of 1960 and 1966 export rankings in the State (Tables 23 and 24) shows Transportation Equipment continuing its dominant role without serious challenge, with Nonelectrical Machinery and Miscellaneous Manufacturing and Ordnance continuing in second and third position, respectively. Chemicals, however, dropped from fourth to sixth rank, with Instruments, Electrical Machinery and Fabricated Metal Products each advancing one rung on the ladder. In this six-year period, Connecticut's estimated share of the national export total shrank from 2.4% to 2.2%, a significantly smaller decline than was previously noted for Massachusetts.

Another significant difference between Massachusetts and Connecticut statistics is the extent to which the States' leading exporting major industry groups achieve a percentage share of the parent 2-digit group's national export total which materially exceeds their State's share of U. S. exports generally. We previously noted that Massachusetts exporters

TABLE 24 - State of Connecticut, Estimated Exports of Manufactures, 1960 & 1963, Rank Order of Ten Leading Major Industry Groups (2-digit SIC)

ESTIMATED EXPORTS OF MANUFACTURES

SIC #	Industry Group	1960 Rank Order	SIC #	Industry Group	1963 Rank Order
37	Transportation Equipment	1	37	Transportation Equipment	1
35	Nonelectrical Machinery	2	35	Nonelectrical Machinery	2
39	Misc. Mfg. & Ordnance	3	39	Misc. Mfg. & Ordnance	3
28	Chemicals & Allied Prod.	4	38	Instruments & Rel. Prod.	4
38	Instruments & Rel. Prod.	5	36	Electrical Machinery	5
36	Electrical Machinery	6	28	Chemicals & Allied. Prod.	6
34	Fabricated Metal Products	7	34	Fabricated Metal Products	7
33	Primary Metals Industries	8	33	Primary Metals Industries	8
30	Rubber and Plastics	9	20	Food & Kindred Products	9
22	Textile Mill Products	10	30	Rubber and Plastics	10

SOURCE: Surveys of Origin of Exports of Manufactures, 1960 & 1963

TABLE 25 - State of Connecticut, Estimated Exports of Manufactures, 1960, 1963, 1966, Selected Metropolitan Areas, Totals and State Percentage Shares

	ESTIMATED EXPORTS OF MANUFACTURES					
	1960		1963		1966	
Metropolitan Area	Total ($ Mill)	% of State	Total ($ Mill)	% of State	Total ($ Mill)	% of State
Bridgeport	39.4	10.2	81.7	20.9	62.0	13.3
Hartford	118.0	30.6	83.1	21.3	127.9	27.4
New Britain	NA	NA	34.4	8.8	18.9	4.0
New Haven	7.8	2.0	9.6	2.5	13.9	3.0
New London	NA	NA	8.5	2.2	18.4	3.9
Norwalk	NA	NA	NA	NA	32.3	6.9
Stamford	NA	NA	7.2	1.8	15.0	3.2
Waterbury	15.4	4.0	10.1	2.6	19.8	4.2
TOTALS	180.6	46.8	234.6	60.1	308.2	65.9

SOURCE: Surveys of Origin of Exports of Manufactures, 1960, 1963, 1966

exceeded their State average in nine of the ten leading exporting groups. This is true for Connecticut in only four such groups. The meaning of these facts is not clear, but it may be related to the fact that Connecticut's overall share of industrial activity generally is much closer to its estimated national export share than is Massachusetts', and that export performance in individual industry groups clusters more closely around the State average.

Within the State, the Hartford and Bridgeport areas originate the greatest concentrations of manufactured exports although here, too, as in Massachusetts there are large changes from survey to survey and the trends are by no means clear. It would appear however, that Bridgeport's share is growing while that of Hartford is declining from the respective percentage shares of 13.3% and 27.4% achieved in 1966 (Table 25). Transportation Equipment and Machinery dominate the Hartford totals and those of Bridgeport as well, with Instruments also contributing importantly to the latter's totals. Norwalk, the only other metropolitan area to originate over 5% of the State's total exports in 1966, emphasized Food Products and Chemicals in its 7% share.

At the industry group level (3-digit SIC), such groups as Hand Tools, Cutlery and Hardware, Metalworking Machinery, Special Industry Machinery, Office Machines, Lighting and Wiring Devices, Communications Equipment, Electronic Components, Mechanical Measuring Devices, Medical Instruments and Supplies and Aircraft Engines have all been important export contributors in recent years above and beyond their local shares of their respective parent industries, and in several instances with exports running as high as 15-20% of total sales. Appendix A names and locates a representative selection of Connecticut's exporting manufacturers.

3.8.3. Other New England States

We previously noted some recent trends in the division of the 15-20% share of New England's exports of manufactures not accounted for by Massachusetts and Connecticut. In 1960, 73,700 full-time employees, or about 22% of the combined industrial labor force of Maine, New Hampshire, Vermont and Rhode Island worked for establishments which reported exports of over $25,000 for that year. This average included a high of 35% for Vermont and a low of 16.6% for the state of Maine. Similar data on employment relationships are not available for later years, but since the relative shares of reported and estimated exports have not changed drastically, there is no reason to believe that these percentages have changed very much.

To begin with, it may be somewhat misleading to lump Rhode Island with the other three states because its total export performance (estimated) in recent years has been twice that of any of the other three (Table 19) in gross terms (7.6% of regional total compared to 3.8% for New Hampshire, highest of the other three, in 1966). Moreover, its growth in total exports, 1960-66, was on the order of 91.2%, compared to Vermont's second-best 48.8%. However, Rhode Island's value of exports/participating establishment was below that of Vermont and New Hampshire although this figure, too, was growing at a rate above the regional average. In general, the 1960-66 interval shows a vigorous, above-regional and above-national-average export growth for Vermont and Rhode Island, while Maine's and New Hampshire's totals grew so little that they lost ground relative to the Region and the nation as a whole.

Paper and Allied Products, with a 25% share dominates Maine's modest export totals, and Lumber and Wood Products has been steadily increasing its percentage share up to the 13% achieved in 1966. Other groups which are significant and consistent exporters include Leather and Leather Products, and Food Products. Machinery and Transportation Equipment, each of which had about 10% of the state total in 1960, fell to 6.4% and 4.2%, respectively by 1966, and a downward trend seems indicated here (Table 26).

As the other state where export growth failed to meet the regional or national averages, New Hampshire sees its export listings dominated by the Nonelectrical Machinery group (53%), a percentage which held rather steady, 1960-66, despite the ups and downs of the State's export totals. 1966 saw a large drop in the share of the Paper Products group, to 6.8% from 28.0% in 1963. Electrical Machinery rose, as it did all over the Region, from 4.8% in 1960 to 11.0% in 1963 and

1966. Leather and Leather Products have consistently been in the 7-10% range. (Table 26)

The experience in Vermont, in contrast, has been one of seesawing percentages between the Electrical and Nonelectrical Machinery groups. In 1960 they had respective shares of 8.0% and 59.0% of the State total, but by 1966 the roles had been reversed and Electrical Machinery was leading with 61.0%, and Nonelectrical had shrunk to 15.1%. No other major industry group has accounted for as much as 5% in recent years. (Table 26)

Nonelectrical Machinery also leads the way in Rhode Island, with a share of the State total very near to 33% in each survey year. Second rank here is held by Miscellaneous Manufacturing (jewelry, principally) at 25.8% in 1966, up nearly ten percentage points from 1963. Other groups contributing more than 5% of the state total in 1966 were Textile Mill Products (8.7%, down from 15.6% in 1960), Chemicals and Allied Products (5.2%), Rubber and Plastics (5.7%), Primary Metals Industries (5.0%), and Electrical Machinery (6.6%). As in the other smaller (in exporting terms) states, disclosure problems prevent any meaningful analysis of performance at the industry group (3-digit SIC) level. Appendix A identifies representative establishments in all four of the above states which have been significant export participants in recent years.

3.9. Summary - New England and Manufactured Exports

1. Exporting establishments have employed from one-third to one half of the Region's industrial labor force in recent years in Massachusetts, Connecticut and Vermont. The comparable figure for the other three states is 15-25%.
2. The Region's exports of manufactures are about $1 billion per year at the present time, with Massachusetts and Connecticut accounting for 80-85% of the total.
3. Exports account for about 6% of product sales for the Region's manufacturing establishments, although this percentage is above 10% for such major industry groups (2-digit SIC) as Nonelectrical Machinery and Transportation Equipment
4. The Region's leading export industries pay better wages and are more profitable than non-exporting and import-competitive groups.
5. New England's leading exporting manufacturers are, as a group, somewhat more export-oriented than their shares in the national economy would indicate.
6. In recent years, Rhode Island and Vermont have experienced the most rapid growth in exports of manufactures, Maine and New Hampshire's shares have declined, and the Mass-Conn share has been relatively stable.
7. The #35-39 2-digit major industry groups (Nonelectrical Machinery, Electrical Machinery, Transportation Equipment, Instruments and

Related Products, Miscellaneous Manufacturing and Ordnance), which account for about 50% of the Region's manufacturing activity, generated a share of the Region's manufactured exports which varied only between 68.8% and 70.1% in the Export Origin Surveys of 1960, 1963 and 1966.

8. New England industry as a whole is somewhat less export oriented than its share of the national economy would indicate.

3.10. Policy Implications of Manufacturing Export Posture

The export origin data now available are so few and have been gathered for such a short time that it is doubtful whether they can tell us much about long-range trends in export performance by New England's manufacturers. However, such data as those in Tables 8 and 26, plus the listings of Appendix A, provide the New England Regional Commission with the most complete and up-to-date information now extant. In the event, too, that guidance from or consultation with the private sector is desired, Appendix A is a good cross-section of the enterprises where international experience and expertise can be found.

We conclude from the foregoing that New England's exporting manufacturers, despite the relatively small size of their establishments, are not significantly different in the challenges and opportunities which they face from their opposite numbers elsewhere in the U. S. We sense this similarity both in the nature and scope of their response to these challenges and opportunities, and in the international economic policies which will best serve their interests. We submit, therefore, that those policies which generally can be shown to be in the national interest will benefit the New England exporter as well.

3.11. Exporters' Policy Interests

The exporter is interested in extending his markets in distant lands. He tends, therefore, to favor those policy measures and directions which move toward the removal of barriers to trade and investment flows. He is interested in opening his own country's markets to foreign goods and services, for such import purchases provide the currencies needed by his present and prospective customers overseas. He is interested in reducing foreign trade barriers as well, for this gives him readier access to his overseas customers. The program of gradually reducing barriers to trade which the U. S. Government has pursued rather consistently over the past thirty-plus years has been, in effect, a public policy response to the demands of the export- and consumer-oriented interests in the U. S. The majority of the business enterprises affected have seen in this policy increased opportunities to do what American business does more effectively than any comparable national group in the world; i. e., compete.

This being true, it is clear that the political pressures exerted on behalf of freer trade by the Trade Expansion Act of 1962, its translation into action via the Kennedy Round agreements, and the ongoing trade-encouraging activities of the General Agreement on Tariffs and Trade, constitute the types of public policies which best serve the exporter's interests.

By contrast, protective and/or subsidized programs such as the tied sales required under the various foreign assistance programs of the U. S. may provide for a short-run expansion of export sales by fiat, but over the longer run such policies are disadvantageous if not disastrous both to the enterprises which take advantage of them and to the country as a whole. Such policies, in effect, provide the exporter with a captive market in which he need not face the challenge of international competition. Although the analogy may not be appropriate in every respect, we may note the current international economic woes of Great Britain, as that once imperial nation tries to threaten and cajole its manufacturers into an internationally competitive export posture after they have had a century and a half of selling in protected colonial markets. America's foreign aid "empire" provides the same incentives to slack off, to stagnate, to lose that vital competitive edge which imperial preference monopolies have drained from British (and French and Dutch and Belgian) businessmen over the years. We do ourselves a great disservice if we continue or extend such misguided public policies.

3.11.1. Mutual Liberalization vs. Mutual Obstruction

In a similar vein, it is sometimes said that U. S. exporters have difficulty competing in international markets because of the special tax rebates, etc., given as export incentives by the governments of our international competitors, and that the U. S. should follow similar procedures. In the first place, although we cannot analyze these charges here, the extent of such incentives tends to be exaggerated. A recent request to a broad cross-section of international businesses, asking that they specify non-tariff barriers to trade encountered overseas, turned up just one allegation.

Direct export incentives are illegal under the General Agreement on Tariffs and Trade except for short-term emergencies. As such, these practices can be and have been successfully protested through normal diplomatic channels. We recommend that the proper trade policy posture for NERC is one which favors negotiations directed toward removing such dubious competitive ploys as other nations may employ, rather than encouraging the construction of similar systems by the U. S. Ultimately, of course, there is no substantive difference between tied sales and export rebates. Each provides access to an overseas market with less competitive effort than would otherwise be required.

When looking at world markets generally, one concludes that the almost automatic assumption by U. S. managements of a competitive posture, instead of seeking out and negotiating collusive accommodations or cartelizations, is one of the U. S. most unique and valuable economic assets. It is certainly as basic to our overall economic capabilities as our much vaunted science and technology. At a time when our European counterparts are being told by thoughtful observers such as Jean-Jacques Servan-Schreiber[25] that they must emulate this competitive modernization to prevent being overrun, in the figurative sense, by U. S. competition, the U. S. would be ill advised to adopt, and the New England Regional Commission should not support, programs which use euphemisms such as "market sharing" or "fair competition" to disguise their basic retrogression toward competitive decay.

3.11.2. Export Propensities and Fiscal Responsibility

Finally, we believe that the present program which includes interest equalization taxes, voluntary and compulsory restraints on private foreign investment, and the possibility of a Kennedy Round "backlash" of import quota bills stems from a misreading of the balance of payments statistics as well as faulty understanding of causes and effects in international economic relations. These have led, in turn, to a symptoms-oriented treatment of suspected ills rather than a direct assault on the causes.

Exporters, in the various aspects of their international marketing, must compete with respect to price, service, quality and other criteria. Although the U. S. Government exerts some peripheral influence upon all of these in its role of creator of the business environment within which all U, S. exporters must operate, the single area in which its policies probably have the greatest long-range impact is that of costs and prices. These influences are exerted through the Government's monetary, fiscal, and wage-price policies.

The exporter is best served by monetary and fiscal policies which keep federal deficits small enough, and interest rates high enough, so that demand-pull inflation does not cause costs and prices to rise farther and faster in the U. S. than they do abroad. He is also well served by a wage-price policy which avoids cost-push inflation by keeping wage increases in line with productivity increases. This requires a responsible countercyclical monetary and fiscal policy generally, a prompt request for and Congressional provision of tax changes at appropriate times, and a courageous revival and enforcement of wage-price guidelines. Granting the sometime futility of hindsight, we must note that an income tax increase in early 1966 would almost certainly have stemmed considerably the import flood of 1966-68. This, in turn, 'would have preserved the now-vanished trade surplus and would have negated the pleas of those industries which now continue to plead for import quotas. Again, we feel that those policies serve best which are causally rather than symptomatically based, and recommend that NERC support those measures which are directed to improving the overall U. S. competitive position in the world rather than those which seek to ease the competitive pressures on particular industries or commodities.

Finally, the existing voluntary and compulsory controls on investment previously noted have been and continue to be inimical to the best interests of the exporting sector of the business community and to the nation as a whole. They are particularly disadvantageous to the New England Region which has a special competitive advantage in finance and investment (Section 3. 13.). By limiting foreign business access to dollar resources, or forcing U. S. borrowers abroad into the Eurodollar market, these controls have significantly increased the cost of capital both to U. S. and foreign enterprises seeking to expand operations in Europe and elsewhere. Since investment outflow is a major source of the dollars which buy U. S. exports, stemming the flow of these funds has also restricted export development. NERC should press for the termination of these policies at the earliest possible time.

3. 12. Export Expansion and New England

It naturally follows from the analysis preceding that we believe that NERC, to the extent that it takes public positions on such matters, will best serve the interests of New England's present and prospective exporters, and of the Region overall, by supporting those national policies which maximize present and future access for U. S. producers to the markets of the world.

But this raises another question on which we might be expected to pass some normative judgments; namely, are New England's exports contributing a proper share to the national total? Also, should public authorities such as NERC take direct or indirect action to stimulate export expansion? We view such questions as part of a larger question to which we should address ourselves before passing judgment on this more limited issue, and that is, what is the proper policy posture for the Region, its several states, and NERC to take toward international business activities of all kinds? We noted earlier that international trade is but one facet of modern international business, and we believe that NERC's concern should encompass the full spectrum of international economic relations.

3.12.1. Current Export Performance Evaluated

First, as to the adequacy of the present level of exporting, no normative criteria exist by which present performance levels can be judged. What crude comparisons we can make suggest a mixed picture. The proportional shares analysis of Table 17A suggests that in 1963 the Region's ten leading exporting major industry groups (2-digit SIC) failed in every instance but one to achieve a share of U. S. export totals commensurate with their respective shares of manufacturing employment and value added. On the other hand, certain industry groups (3-digit SIC) sell as much as 20% of their output overseas, and we have previously noted that the greater export propensity/establishment found elsewhere in the U. S. seems to reflect the fact that businesses outside New England are larger, and that it is this size factor rather than New England's export deficiencies which account for the sagging averages.

But whether or not one regards present export activity as adequate, we reiterate our previous judgment that exporting establishments are desirable regional residents, and that policies designed to attract and retain such business establishments should be a continuing part of public policy. The question comes on how best to implement such policies.

3.12.2. Export Expansion - The Federal Program

Present efforts to stimulate export interest and activity within the business community presume that this is best accomplished by a combination of exhortation and incantation. We feel that such efforts are basically ineffective. To be sure, it is difficult to fault a program which consists, essentially, of telling businessmen that it is their patriotic duty to increase their profitability by expanding their overseas sales. Moreover, some of those individuals who have served as "export missionaries" to the business hinterlands do return with some convincing tales of lasting "conversions" to the exporting faith. There is also contrary evidence, however, in the declining export performance of communities where export promotion programs of an elaborate nature have been tried. As with other evangelical efforts, the immediate enthusiasm often lapses over the longer run.

We feel that NERC should scrutinize very carefully the efforts now being made toward this objective (export expansion) as to their scope and essence, with a view to deciding what types of programs, if any, it should support and under which regional jurisdictions these should be placed. The views which follow directly oppose current orthodoxy on the subject but, we believe, they are in touch both with current realities and, what is more important, take into account the directions which are indicated for New England's economy in the 1970's and 1980's.

A first object for evaluation is the New England Regional Export Expansion Council (REEC), the local adjunct of the National Export Expansion Program. This national effort is a joint venture of the international business community and the U. S. Department of Commerce. Central administration in Washington is the responsibility of the Executive Director for Export Expansion Councils, located in Commerce's Office of Field Services, advised by a nationwide business advisory board. The President of the Regional Council is always a local businessman, and the Director of the local Commerce Department Field Office serves as Council Secretary.

The REEC's 25-30 businessmen and government officials, all volunteers except the afore-noted Field Office Director, sponsor and carry on a variety of activities such as:

(a) Special educational programs and export seminars

(b) A speakers bureau of executives prepared to discuss the advantages of exporting

(c) Limited counseling for businessmen considering exporting

(d) Occasional publication of news of export opportunities

3.12.3. Private Sector Efforts

Related New England activity in the private sector comes from a variety of trade associations, Chambers of Commerce and the like, but the only continuous efforts which are professionally directed and regional in scope are those of the International Center of New England, Inc., in Boston. The International Center is a non-profit, voluntary association of business and professional people with international business interests. Its 1,000 corporate and individual dues-paying members finance its entire budget and support a small executive and secretarial staff.

The Center's activities encompass virtually the entire range of international business policy and operational matters, ranging from executive education and government relations to export controls and international marketing. The Center devotes some time to conventional export promotion activities (many REEC members are also Center members), usually in cooperation with REEC, but as noted earlier its range of activity and concern is far broader than this one issue alone.

The Center also operates International House, a restaurant on the Boston waterfront, and provides some facilities for meetings and conferences. A typical Center schedule for a month includes five or six professional meetings dealing with international business issues, in addition to providing library and reference services to its membership and the public on a day-to-day basis.

3.12.4. Lack of Lasting Results

The National Export Expansion Program has tended, as we noted earlier, to take on a strong missionary flavor. Itinerant teams of spokesmen sponsored by REEC visit various regions and communities to urge local manufacturers to consider marketing their products abroad. A typical effort takes an afternoon or evening, with several presentations including one or more by successful exporters (if we did it, so can you!), representatives of service industries such as banking, insurance and shipping (we're all here to help you to get started), and a spokesman for the U. S. Government (help your country's balance of payments deficit).

The question is whether more of this needs to be done, whether what is now being done could be done better, and whether the level and scope of present activities serve the public interest by stimulating a healthy and lasting expansion of international business activity. As we view the needs of the Region as a whole, and of the international business community overall, we feel that present efforts are inadequate, impoverished, incoherent and misdirected, despite the heroic efforts (largely volunteer) of many dedicated individuals.

REEC, as noted, consists entirely of volunteers at the professional level with the single exception of the Secretary, an assignment which can properly claim but a small portion of the time of a Field Office Director. What is even more important, we know of no data which indicate that the kinds of programs which REEC puts on have had either significant initial success or, what is more important, any lasting impact. Spokesmen for the program are usually hard-pressed to supply any evidence of concrete achievement.

In addition to this inability to muster statistical proof of the efficacy of the occasional ad hoc missionary program, there are well-documented failures of much more elaborate efforts along these same lines, programs which on the surface at least seem to have been much more soundly based and sophisticatedly conceived. Perhaps the best known of these was the BLUTRADE (B-business; L-labor; U-university) Program, conceived by a New England consulting firm and sponsored at various times in New England and elsewhere by the Small Business Administration and the National Association of Manufacturers. Based upon the concept that export expansion efforts must engage the interest and efforts of the entire community, BLUTRADE was tried as a demonstration project in Worcester, Mass., and in Hartford, Conn., supported by a SBA grant. Following a saturation public relations effort in all media, and with impeccable local support and sponsorship, local manufacturers were urged to complete questionnaires which described their firms and products. From national statistics, export-oriented industries and products were identified. These firms were then offered at little or no cost the kinds of general advice, market research and specific product analysis which foreign market penetration demands but which smaller businesses are usually unable to afford. Prospective export markets were located, and the prospective exporters were given the names of auxiliary service businesses (banks, freight forwarders, etc.) who would assist them, as well as prospective sales agents and distributors in the foreign countries.

Although initial response and enthusiasm were great in both localities, the longer-run consequences seem to have been negligible, if not negative. Our earlier statistical analysis (Sec. 3.8.1 and 3.8.2) indicated that although the trends were not completely clear, exporting had steadily declined in the Worcester area since the program was put on there in the early 1960's. A more detailed post-mortem analysis in the Hartford area indicated that less than 15% of those firms for which export promotion services were provided took any action on the information made available to them, and that "not one firm completed an export sale as the result of such stimulation".

3.12.5. Faulty Premises Presumed

While this is not the place to launch a detailed critique of export expansion programs generally, we believe that they tend to be unproductive because they are based upon a false premise; i. e., the belief that many business establishments do not export because

(a) They are unaware that export markets exist OR

(b) They cannot surmount the administrative complexities of moving goods across national borders OR

(c) They cannot meet the initial costs of foreign market penetration.

It is more realistic, we believe, to regard exporting as an almost inevitable manifestation of those qualities and conditions which we discussed on pp. 15-17.

A competitive capability which spans a firm's national markets will naturally tend to spill over, so to speak, into more distant areas. Where this condition obtains, no special urging is needed to initiate exporting. The quality and caliber of the product will attract foreign interest and the vigor and expansionist philosophy of the management will both encourage growth of the firm to a level where economies of scale can be realized and will naturally seek out broader markets. Exporting, then, becomes a natural outgrowth of this competitive ebullience in essentially the same way that marketing plans for the Chicago area are a natural next step for a New England manufacturer whose products have just become firmly established in Pittsburgh, Cleveland and Indianapolis.

On the other hand, if this proper combination of product suitability, marketing competence and managerial enthusiasm for growth does not exist, no amount of haranguing will produce fruitful results.

We recommend, therefore, that export expansion programs as presently constituted be omitted from NERC's program planning. At the same time, however, we strongly recommend that NERC undertake other and (we believe) more productively relevant short- and long-range programs in support of the Region's international business community, including present and prospective exporters, as set forth below.

3.13. The Region's Developing Comparative Advantage

In general, NERC should regard its international economic mission as one of supplying supporting and catalytic services which will enable the Region to maximize its economic growth and real income by pursuing its international and interregional comparative advantage. This can be done by encouraging the growth and initiation of those economic activities, national and international, in which New England establishments are unusually competent, productive and competitive. Such a policy posture was the basis of our earlier recommendation (Sec. 2.4) of continuing support for export-oriented industries, and assistance to ease the ongoing manufacturing transition from non-durables to durables and technology-allied goods. This transition has been in progress for about fifteen years and shows every sign of continuing. But what other developing trends are relevant to regional comparative advantage?

The report entitled The New England Economy Today and Tomorrow (NEETT) prepared for NERC by Arthur D. Little, Inc., points out a number of economic trends and makes some perceptive forecasts which are basic to the policy recommendations we make later on (Sec. 3.18.). While noting the ongoing shift from soft goods to durables, they also state that

> New England's most rapidly growing sector is services - educational, medical, business and personal ...

The trend toward services as opposed to goods is not peculiar to New England, having been observed throughout the U. S. What *is* particularly noteworthy is that in three of these four service areas, educational, medical, and business, New England's growth rate was between 17% and 100% faster than the national average, indicating unusual concentrations of competence within the Region. ADL, in confirmation of this, goes on to state

> Entirely new products and new industries continue to appear and expand, fed by an *unexcelled technological input* from the Region's educational, scientific research and development and medical community. The Region's *entrepreneurial, management and professional skills are unmatched in the world economy* and ... the provision of valuable services, *many of them exportable*, has become much more important to the regional economy than the production of goods. (Emphasis added)

NEETT also notes New England's traditional role as an exporter of loanable and equity funds, and finds this area another which has unusually favorable prospects for continued, above-average growth.

If it is true, therefore, that an expanding regional competitive advantage now exists in professional and financial services, including science and technology, and that these are the areas in which "exporting" shows the best growth prospects over the next decade or two, certain policy implications for NERC would seem logically to follow.

3.14. International Business Infrastructure

Public investment in economic infrastructure such as roads, ports and schools has a long history in the U. S., and is regarded by almost everyone as an appropriate use of public funds. The usual criterion of propriety for such investments, in a private enterprise-oriented economy such as ours, is that they must be in the public interest but too expensive, or too uncertain as to rate or length of payback, to attract private financing. In other parts of the so-called "capitalist" world, such as Europe or Japan, the accepted realm of such infrastructure investment is much broader, encompassing virtually all transportation and communications facilities, and even certain basic manufacturing industries.

We make this point not as advocates of extending the scope of traditional public investments in New England, but to argue (perhaps unnecessarily) that public investment infrastructure is regarded here and abroad as a proper and necessary use of government initiative and public funds. We suggest, further, that the previously-noted trend in our Region's economic base toward greater emphasis on professional services, and the growing competitive advantage which distinguishes this sector, should stimulate some rethinking of infrastructure investment priorities.

3.14.1. Information as Infrastructure

More specifically,

(a) Professional services rest on personal expertise

(b) Given a proper base of scientific and professional training, personal operational expertise in scientific, engineering, financial or management consulting depends upon knowledge of, and access to, current information and historical experience

(c) Granting the ADL contention that New England's "entrepreneurial, management and professional services are unmatched in the world economy", and the eminent exportability of these services, THEN

(d) The Region's competitive capability, both national and international, would be greatly enhanced if these rare talents were provided with unexcelled access to the varieties of current and historical information upon which this operational expertise is based.

3.15. A Regional Data Bank for the New England Economy

Those who are concerned with public efforts on behalf of international business development, as well as other public and private executives and researchers seeking special types of products, production facilities and/or professional expertise, have often complained to the authors that there are no data to which they can go to match their needs against a listing of the international business interests and capabilities of the Region's business enterprises, public and private agencies, or professional consultants. Similarly, the widely scattered locations of business and economic data which do exist impose high time- and manpower-cost burdens on decision-makers seeking to base their conclusions on a reasonable foundation of fact.

Because of this, and in view of the previously-noted trends in the Region's economy, we conclude that New England should lead the way by creating the Nation's first Regional Economic Data Bank, and that a significant percentage of its capacity should be given over to information of international economic and business operations. We recommend, further, that NERC assign a highest priority to the preliminary study of the cost and feasibility of such an establishment.

While not attempting in any way to deny the fact that such a project would be precedent-setting and venturesome, we may also note that it could build upon some well-laid groundwork. Some of the functions which would logically be assigned to the Data Bank are now being carried out more or less by Federal and State agencies, especially by the U. S. Department of Commerce Field Offices in Boston and Hartford, and by public and private research and consulting organizations within the Region. Moreover, much of the information which would be stored there is available at least to some degree, with conspicuous exceptions such as those cited on pages 6 and 7. What is needed to bring basic order out of the existing chaotic fragmentation is:

(a) A data development program to fill the critical information gaps

(b) The centralization of this information in a medium-to-large high-speed data processing facility

(c) The establishment throughout the Region of remote access facilities which would be available to the public at reasonable cost

3.15.1. The Nature of Bank Deposits

The authors frankly concede their inability at this time to specify in any detail the information which this Data Bank should contain, especially outside the international economic area. Such a facility will be unique, and would have no previous examples to use as models. In a very general way, however, the internationally oriented data would be of two basic types:

(a) Information about New England's economic structure and capabilities, with emphasis on existing relationships and expertise in international trade, investment and personal services. Most of this information does not now exist in published form, if at all.

(b) Basic national and international data of prime concern to internationally involved business establishments. Somewhat more of these data now exist although their quality and quantity vary greatly from sector-to-sector and country-to-country. They are accessible to some extent, provided that the prospective user can wait for file searches, etc., through the U. S. Department of Commerce, the United Nations, and private and public libraries.

3.15.1.1. New England Information

Although, as noted above, the precise nature of the data to be stored in the Data Bank cannot be specified without a more thorough study than this paper is qualified to supply, it is possible to draw the general outlines of such a collection. Depending on subsequent verification, the following data would seem to be appropriate:

(a) Regional income and employment data, such as are now collected in the New England Economic Almanac

(b) A Regional Business Census, by 4-digit SIC, listing business establishments by name, location, product lines, annual sales, number of employees, international operations, and intercorporate affiliations. Various cross-classifications would enhance the usefulness of this information.

(c) Data on the activities and relationships (page 6) which make up the Region's international economic relations

(d) A Census of Public Agencies, non-profit organizations and others which offer professional services related to international business

(e) Selected findings of current private research on the New England economy and international markets

Needless to say, the continuing information explosion will throw up data faster than any collection and storage facility can absorb them, and the problem ultimately will be one of selection rather than availability. We feel that it is neither necessary nor prudent to specify greater detail at this time, beyond expressing a general opinion that the largely nonexistent regional data be developed and collected first, with national and international information to follow after.

3.15.1.2. National and International Data

While we are even less ready to specify which data should ultimately be stored in this portion of the Bank, we would envision a range of information comparable to that contained in the annual

Statistical Abstract of the U. S., both for the U. S. and for the major world markets for New England goods and services. Information gathered by the United Nations, its Regional Economic Commissions, and by such organizations as the International Monetary Fund, the OECD, International Bank for Reconstruction and Development, and others could be culled for appropriate data. Most important, of course, would be the ability to have quick access to this information, and to be able to manipulate and correlate.

3.15.2. Public and Private Responsibilities

If a Data Bank is to be created, the question then arises as to what portion of the original capital expenditures, start-up costs and operational expenses should be borne by the public exchequer, as a contribution to economic infrastructure, and what share by the users who stand to increase their personal or corporate incomes through their access to the data stored there. We cannot, at this time, go beyond a general statement that public funds should support the initial costs of a feasibility determination, and that user charges should ultimately support most of its operating costs. The initial feasibility study may determine that the project would be appealing to private investment, in which case further public outlays would be unnecessary. Only time and research can provide these answers.

Our main concern here and now is to encourage the effective combination of public and private initiative in the investigation of this unique opportunity, under the same rationale which supports highways. airports and seaports, and the flow of information through Federal and State departments of commerce. We see this as a necessary part of the continuing effort to attract desirable industry to the Region through improving the business environment. We contend, further, that the public interest is better served by a policy which spends some public funds to create a superior informational infrastructure than by programs such as tax exemptions and other discriminatory favors. The latter approach reduces the inflow of public funds and runs the risk of deals and favoritism whereas the former improves the business environment for all participants. It increases profits and income generally and eventually replenishes the public coffers with increased tax yields not just from the favored few (who often depart upon expiration of their tax exemption) but from all those who have made profitable use of the information. User charges, too, add to the public treasury's recovery of the original investment.

Finally, we see the project as logical because it builds upon those superior strengths which the Region is already acknowledged to possess; i. e., brains and technical know-how. The one tends to enhance the other, and a regional economic development program based upon an environment containing both superior talents and business information would, in our judgment, foster sound development.

3.16. A Regional Authority is Needed

The Development of the Data Bank would reflect a new approach to public responsibility in the building of economic infrastructure, the recognition of the increasing importance of information flows as opposed to physical facilities. As an adjunct, we feel that the Region would benefit greatly from some searching cost/benefit studies of the continuing investment in general cargo seaport facilities. Although it is not our function to appraise or evaluate the Region's seaports, their generally decrepit condition is public knowledge. Moreover, we have seen no recent evaluations, including the SARC analysis prepared for the NERC under the present study program, which are optimistic about their role as handlers of domestic or international general cargo (as opposed to bulk commodities). At the same time, we see significant amounts of state and local funds flowing into the maintenance of eight small general cargo seaports (not including Boston), with each of the five coastal states having an important, although not necessarily proportional, commitment to such efforts through Port Authorities or similar agencies.

Not unmindful of the very substantial costs involved in setting up a Data Bank, and the difficulty of getting approval of large appropriations from harassed state and national legislatures, we suggest the possibility that some of the funds now being invested in competitive seaport development by the individual states might better be cooperatively invested in informational infrastructure. But whether this particular source of funding is feasible or not, we recommend that NERC encourage the several State Port Authorities and Foreign Trade development departments to expand the areas of their concern beyond harbors, docks and export trade missions, and to accept some responsibility for providing the necessary public infrastructure for all international business activities.

We recommend, further, that if the Data Bank passes its feasibility tests, that NERC seek the merger of these separate state agencies and port authorities into a Regional International Business Authority (RIBA). RIBA would be responsible for the development and operation of all public international business infrastructure in the Region, including ports, the Data Bank, and any state and local offices which might deal with international business matters. Because of the dominant role of private enterprise in this international business area, the RIBA should be chartered as a joint venture of the governments and the business community. It would offer membership status to, and serve as public spokesman for, the presently existing private organizations such as the International Center and the pre-existing Foreign Trade organizations now existing in such communities as Providence, Springfield, and Portland.

An organization of comparable scope is needed to operate the Data Bank, to take a systems-oriented overview of the Region's international economic involvement, and to provide a coordinated program and unified management of public policy in this vital area. We would expect, also, an investment of public seed money in this effort, as well as long-term support for RIBA, the scope of which is so great, and the returns from which are so diffuse (although of great magnitude), that the attraction of substantial private funds is extremely difficult to foresee.

3.17. Two Interim Suggestions

At best, the Data Bank and RIBA proposals must proceed through numerous time-consuming preliminary stages which will require several years at least. In the meanwhile, there are two interim steps we should like to propose to NERC.

First, in order that the New England international business community may have better representation before the state and federal legislators, and have access to a better quality and larger quantity of professional and public services, we recommend that NERC consider the award of a modest annual operating subsidy of $15,000-20,000 to the International Center of New England, Inc. This would amount to a 15-20% increase in that organization's operating funds, and would be in keeping with similar arrangements in other forward-looking communities such as New Orleans. The careful investigation which would necessarily precede such an award would, we believe, disclose that many of the Center's activities such as the receiving of foreign visitors, assistance to students, and contacts with foreign diplomats are of a public service nature and, thus, deserving of public support. We hasten to note, also, that the principal author of this report is an officer and director of the International Center, although he receives no pecuniary advantage, direct or indirect, from this relationship. Neither would he, nor any relative or professional associate, be in any way the beneficiary of such a grant.

Second, although we have indicated our belief that the traditional approach to export promotion is mostly futile, there is an appropriate way in which NERC could help those firms sufficiently competitive to wish to import or export. This would be to sponsor, and modestly subsidize at the rate of about $5,000 per year for the next ten years, a program to establish in each of the Region's ten largest commercial and industrial cities, a publicly-accessible minimum international business library of basic and current reference materials. In most instances, this would not require building a collection from scratch, but rather a selective supplementation of collections now in public libraries, colleges and universities, and trade associations and chambers of commerce.

3.18. Summary of Export Policy Recommendations

1. International business policy for the New England Region should be multi-jurisdictional, interstate, and coordinated through a NERC-sponsored Regional International Business Authority (RIBA),
2. Among RIBA's responsibilities should be the development and operation of the international economic and business section of a Regional Economic Data Bank, as well as more traditional international business infrastructure such as seaport facilities,
3. Individual states should have special international trade promotion offices only within the framework of a broader regional policy,
4. Traditional export expansion activities should be abandoned.
5. NERC and RIBA should maintain close liaison with the international business community, with particular emphasis upon keeping the business community abreast of new programs and developments within the Federal Government, and seeing to it that the Region's policy interests are properly represented before the Congress and the Executive Branch,
6. NERC should sponsor on its own and in cooperation with the U. S. Bureau of the Census, research designed to determine the feasibility of a Regional Data Bank and of developing data to fill the statistical gaps noted on page 6.
7. Ten regional international business libraries should be established,
8. Pending RIBA's establishment, NERC should consider awarding a modest operating subsidy to the International Center of New England, Inc.

3.19. New England and Agricultural Exports

The relative importance of New England's agriculture, compared to the U. S. as a whole, would seem to have been on the decline almost since the earliest days of settlement of the North American continent. At present this total share has shrunk to 2.0%, with none of the individual states accounting for more than Maine's 0.6% of the national total of commercial sales.

We noted earlier that no statistical counts are made of state and regional exports of agricultural products, and that the only information which purports to deal with this activity consists of some "proportional shares" estimates prepared by the U. S. Department of Agriculture. This same discussion also commented on the limited reliability of such estimates. Given the insignificant level of the activity area, then, and the poor quality of the data, it is not reasonable to devote much space to its analysis.

At the same time, however, since the U. S. Government publishes these estimates as the best information available, we shall take brief passing note of the highlights. Half of the Region's substantial commercial farms (gross receipts over $40,000/yr) are in Maine (N. E. 4,271; Maine, 2,052), and the largest gross income generators in 1964 were poultry (24%), dairy products (38%), and potatoes (12%), the foregoing being percentages of total regional cash receipts of $740 million. Only potatoes, at 15%, saw the Region acquiring more than 5% of U. S. total receipts for any cash crop or group of crops.[26]

Because most of the Region's cash crops are not among the Nation's agricultural export leaders such as wheat, cotton, rice, etc., the percentage of agricultural exports allocated to the Region by the Department of Agriculture's estimates (0.5%) is even smaller than the regional share of total agricultural activity, with no state's export estimate exceeding 0.2% of the national total (Table 27). Connecticut's allocated share is proportionally higher than its overall share in New England agriculture because of its tobacco growing activities, tobacco being the conspicuous exception to our previous generalization that the Region's agriculture is not export oriented. In addition to tobacco, some specialty products such as mackintosh apples have a substantial export market and, in the early 1960's prior to the U. S.-EEC clash in the notorious "chicken war", broiler producers were doing a brisk export business which might be revived in the event that trade blockages can be negotiated away in the future. However, such prospects are now more remote than ever since the EEC has raised its poultry output to the export level. The issue now seems to be not whether U. S. producers will, in the near future, regain access to their former Western European markets on equal terms, but whether there will be trade wars between the U. S. and the EEC regarding access to third markets such as Switzerland. Table 28 lists the most likely export leaders for each state at the present time.

At the level of policy recommendations, it is difficult to assign a high priority to problems arising from tha international economic relations of New England's agricultural sector. Looking to the interests of the Region as a whole, as a large net importer of things agricultural, it would seem to be best served by policies which encourage the freest possible flow of agricultural products, both interregionally and internationally. Thus, it is difficult to see how the Region derives any benefit from present U. S. agricultural policies which restrict output and raise prices at home, and restrict imports from abroad, except for possible roundabout benefits which may accrue from having a prosperous agricultural sector in the U. S. outside New England as an eventual customer for the Region's manufactures.

A significant exception to this lack of policy benefits might be the dairy sector, where import quotas on processed dairy products have provided a protective umbrella which has been part of the basis of the initial success in marketing the products of Vermont's recently revived cheese manufacturers.

On the other side of the coin, it is also clear that recent breakthroughs in productivity in the basic grains, wheat and rice, while offering great hope in the world battle against malnutrition, will so increase supplies in the traditional importing countries and on world markets as to bring uncertainty and a deflationary bias to international commodity markets for some years to come. The Region may, in fact, be fortunate that no sizable segment of its farmers seems particularly vulnerable to these pressures.

3.20. Fishery Exports

Much of the New England-based fishing industry suffers from import competition, due to the incompatibility of its traditional "family boat" organizational tradition with the potential economies of scale available through more modern methods. As such, the industry exports little or nothing, and is one of the Region's most consistent seekers after protective tariffs, import quotas, construction subsidies and other havens from international competition. The only noteworthy exception is Maine's canned sardine industry which, in 1966, exported an estimated $2 million, thereby accounting for virtually all the exports of sardines from the U. S. in that year.[27]

TABLE 27 - New England Region, Estimated U. S. Export Shares of Agricultural Commodities, by State, 1965-66

State	1965-66 Value ($Mill)	AGRICULTURAL EXPORTS Percent Change from 1959-60	% of Region 1965-66	% of U.S. Total 1965-66
Maine	14.8	+32	43.1	0.2
New Hampshire	1.2	+20	3.5	(A)
Vermont	1.9	+36	5.5	(A)
Massachusetts	6.1	+27	17.8	0.1
Rhode Island	0.3	-40	0.9	(A)
Connecticut	10.0	+54	29.2	0.1
NEW ENGLAND, TOTAL	34.3	+35	100.0	0.5

TABLE 28 - New England Region, Principal Estimated Agricultural Exports, by State

STATE	AGRICULTURAL EXPORTS
Maine	Vegetables and Poultry
New Hampshire	Fruits and Vegetables
Vermont	Dairy Products and Fruits
Massachusetts	Unmanufactured Tobacco and Fruits
Rhode Island	Vegetables
Connecticut	Unmanufactured Tobacco and Fruits

SOURCE: Tables 27 & 28, Foreign Agricultural Trade of the U. S., February 1967

CHAPTER 4 - IMPORTS AND THE REGIONAL ECONOMY

4.1. The Economic Functions of Imports

Imports into any nation or region serve three basic functions and may, therefore, be said to have three kinds of impact upon the recipient economy as follows:

FUNCTION	RELATED IMPACT
1. Source of consumer goods	1. Increased purchase options for consumers, providing access to goods otherwise unavailable and/or access to alternate lower-cost sources of available goods
2. Source of producers inputs	2. Essentially as above, except that direct beneficiaries are producers, not consumers, whose production options are increased and/or whose unit costs are reduced
3. Source of producers competition	3. Increased competitive pressure on local producers with varying results including reduced sales or profits, cutbacks in production or employment, lower prices for outputs, or more propensity to adapt and innovate

The first of the two impact types above are clearly in the interest of increased economic efficiency and growth in real income. The third is more of a mixed bag, although most analysts would probably see its impact as largely disruptive in the short run, but potentially beneficial over longer periods of time, taking a broad view of the public interest.. This ambiguous appraisal of the effects of import competition reflects our awareness that a competitive threat to any area's existing sources of income and employment should never be shrugged off as unimportant or unworthy of possible remedial consideration. Such challenges may be exceedingly disruptive and, as the New England Region painfully realized following the South's inroads into the textile and shoe industries in the 1940's, the aftermath in the form of a residue of overage, hard-core unemployables from the smitten or departed industries may constitute a lingering socio-economic problem of considerable severity. On balance, however, this actual or prospective burden is lightened when the actuality, or merely the threat, of severe competition galvanizes into adaptive or innovative action managements which had previously been willing to rest on their laurels, with the final result that both the enterprise and its resident community become more prosperous. Opinions reported by Bender's Greater Hartford study bear this out.[28]

Over the longer run, there is also the issue which we mentioned earlier (Sec. 2.4.). That is, that import-competitive industries may be less desirable industrial residents than their export-oriented counterparts because of slower rates of growth, lower wages and lower profitability. It is also true that import competition, from within or without the U. S., encourages the transfer of regional resources from less efficient to more efficient modes of employment, a development clearly in the regional interest. This generalization is qualified, of course, by the assumption that alternative employment is feasible and available, for import-competitive employment is preferable to none at all. And while is is possible now to look back on the dislocations of the late 1940's and early 1950's and say that these eventually improved the regional economy by making it possible to substitute competitive hard goods for competition-threatened soft goods, retrospect also indicates that not enough was done to ease the discomforts of the transfer.

Having said this, however, we still recommend that the Region and NERC invest personal and financial resources in seeing to it that the competitively displaced are well supported by unemployment compensation, skills rehabilitation and training, job opportunity information, and relocation aids and incentives rather than in efforts to secure protective exemptions for its import-competitive sectors.

4.2. Lack of Primary Data

We have noted several times in earlier portions of this study that no comprehensive data exist anywhere regarding the volume or value of imports ultimately destined for New England, or any other U. S. Region, whether production inputs or consumer goods. Once again, therefore, we are reduced to imputing to the New England Region some proportional share of the impact of relationships which we know to hold true for the U. S. as a whole. However, since the sections immediately following deal more with competitive postures and policy premises rather than with attempts to construct quantitative data, there may be less inferential peril here than in most proportional shares attributions.

While the present study was underway, the Federal Reserve Bank of Boston completed and published a research report dealing with the impact on New England industry of the tariff-cutting agreements reached in the Kennedy Round negotiations at Geneva.[29] In the course of its investigation, the Bank employed its very considerable professional and data-processing resources over the period of a year with a view toward developing some rough measures of the extent to which New England's manufacturing establishments are import users or import competitors. The sections which follow hereafter rely heavily on the results of the Federal Reserve study, Tables 29-31 are copied verbatim from its statistical supplement, and the authors are greatly indebted to Dr. Robert Eisenmenger, Director of Research, and Mr. Norman S. Fieleke, Economist and Study Director, for their cooperation in supplying data which greatly enhanced the contents and conclusions of our efforts. They cannot, of course, be held responsible for our conclusions and recommendations.

The reader is cautioned, however, that even the Federal Reserve study did not attempt to construct regional tables of imports. The Bank staff was able, however, to manipulate and correlate national statistics in a more extensive and sophisticated manner than our time and resources allowed, and our conclusions have benefited from this statistical achievement.

4.3. Import Users and the Kennedy Round

Since we cannot definitely ascertain or accurately estimate the flow of imported raw materials and components into the New England Region from the U. S. or abroad, we can only assume that those industrial groups resident in New England use various classes of inputs in about the same proportion as their similarly classified counterparts resident elsewhere in the U. S., and that a similar proportional share of these inputs is imported; e. g., we assume that if imported non-ferrous metals constitute 44% of all non-ferrous metals sold in the U. S., then 44% of all the non-ferrous metals purchased by New England manufacturers come from foreign sources, too.

Similarly, if these imported non-ferrous metals, taking the U. S. as a whole, typically constitute 14% of the input cost of the brass castings producers in the U. S. overall, then this same percentage is presumed to hold true for New England's manufacturers of these products. The final conclusion would be that 44% of 14% of the brass casting's unit costs, or 6.2%, would represent imported inputs.

Fieleke's computations and estimates deal with some thirty-two industry groups (3-digit SIC), each of which employed at least 15,000 persons or added value to manufactured products in excess of $200 million in 1965. That is, each industry group in the sample accounted for 1% of regional value added by manufacture, and altogether they constituted about 60% of the Region's manufacturing employment and value added by manufacture for that year (Table 29).

Table 30 identifies each industry which supplies significant amounts of inputs (over 5%) to one or more of these important industry groups, and shows how the dutiable status of each of these presumed regional imports was affected by the Kennedy Round tariff reductions. It is clear that ad valorem equivalent duties on these inputs, overall, were rather substantial prior to the Kennedy Round reductions, averaging 16.1% on dutiable items and 14.8% overall. Moreover, the fact that the average of all items (Column 3) was in most instances so close to the average tariff on dutiable items only (Column 5) indicates that relatively few items were duty-free. We conclude, therefore, that the import tax burden borne by New England's major manufacturing industries will be significantly lightened as these duty reductions are implemented in the years just ahead, thereby making an important contribution to the Region's competitive effectiveness. The analysis does not, however, permit us to make any detailed estimates as to the precise extent to which any particular industry group's costs will be reduced. Also, as noted above, we have only a very general impression of the extent to which New England producers' inputs are actually imported.

TABLE 29

EMPLOYMENT, PRODUCTION, AND FOREIGN TRADE IN MANUFACTURES OF MAJOR IMPORTANCE TO NEW ENGLAND[1]

Industry		Year	Employment in New England	Value Added ($ millions)		Shipments ($ millions)		Directly Competing Imports into the U. S. ($ millions)	Estimated Exports from New England ($ millions)
SIC Code (1)	Description (2)	(3)	(4)	New England (5)	U. S. (6)	New England (7)	U. S. (8)	(9)	(10)
372	Aircraft and Parts	1960	68,366	720.5	6,450.2				
		1963	78,985	860.5	7,867.3	1,129.7	13,776.4		133.1
		1964	75,731	843.2	7,825.1	1,536.8	13,771.2	90.1	
		1965	80,891	1,048.5	8,492.7	1,798.9	14,527.9	158.8	145.2
366	Communication Equipment	1960	30,224	342.6	2,813.9				
		1963	51,496	564.8	5,341.5	1,019.4	8,882.0		57.9
		1964	48,393	588.1	5,386.7	976.5	8,464.4	60.6	
		1965	46,624	618.3	5,750.5	980.8	9,127.5	87.5	36.5
354	Metalworking Machinery	1960	41,827	397.6	2,687.6				
		1963	40,380	426.0	3,037.7	614.6	4,474.7		97.3
		1964	40,850	487.5	3,525.6	677.7	5,152.7	69.8	
		1965	45,722	581.6	4,005.7	820.2	5,930.3	104.1	69.0
367	Electronic Components	1960	53,342	355.6	2,113.6				
		1963	49,324	376.9	2,508.1	477.0	3,909.8		27.1
		1964	45,725	351.2	2,495.1	544.4	3,913.4	59.8	
		1965	49,783	473.6	3,320.9	772.9	5,041.0	101.8	49.1
335	Nonferrous Rolling and Drawing	1960	31,901	316.8	1,858.0				
		1963	30,759	334.0	2,127.7	967.0	6,612.9		11.5
		1964	29,465	374.3	2,198.5	1,096.9	7,231.9	122.5	
		1965	30,856	471.4	2,565.3	1,314.3	8,476.6	163.1	11.4
356	General Industrial Machinery	1960	34,636	337.4	2,285.9				
		1963	33,079	383.8	2,812.7	565.0	4,732.8		29.5
		1964	32,017	373.0	3,176.4	558.8	5,283.5	119.1	
		1965	34,089	463.9	3,626.2	671.2	6,062.2	161.8	35.8

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
314	Footwear except Rubber	1960	81,199	410.2	1,221.1				
		1963	73,736	400.8	1,279.3	755.2	2,372.7		*
		1964	74,302	442.0	1,392.4	798.2	2,503.6	86.5	
		1965	75,345	442.1	1,420.5	822.3	2,603.0	97.7	*
342	Cutlery, Hand Tools, Hardware	1960	28,070	284.6	1,409.0				
		1963	25,888	352.7	1,707.6	511.5	2,736.9		26.5
		1964	26,266	356.8	1,822.7	535.5	2,965.8	61.7	
		1965	27,536	419.1	2,084.6	617.2	3,391.8	71.5	33.7
355	Special Industry Machinery	1960	34,849	329.6	1,762.4				
		1963	31,713	324.4	1,917.2	539.4	3,303.3		104.6
		1964	32,556	353.6	2,210.2	589.2	3,756.1	140.6	
		1965	34,220	406.9	2,426.6	666.6	4,194.1	183.7	116.1
262	Paper Mills, except Building	1960	29,738	323.7	1,877.0				
		1963	27,200	347.1	1,857.2	722.5	3,824.9		26.0
		1964	26,925	344.1	1,974.0	735.2	4,000.0	19.7	
		1965	28,197	377.2	2,042.8	806.6	4,278.1	19.7	29.9
373	Ship and Boat Building	1960	21,466	216.5	1,022.2				
		1963	25,768	249.0	1,192.7	399.9	2,040.0		2.5
		1964	24,018	243.0	1,275.6	390.0	2,249.5	9.8	
		1965	30,248	283.2	1,414.9	447.3	2,509.1	12.7	6.8
284	Cleaning and Toilet Goods	1960	5,378	146.5	2,229.0				
		1963	6,416	211.3	2,866.4	339.7	4,855.5		4.6
		1964	7,084	231.9	3,105.3	375.4	5,204.4	17.1	
		1965	7,410	274.7	3,293.5	420.9	5,580.7	18.8	7.7
364	Lighting and Wiring Devices	1960	21,778	228.5	1,433.6				
		1963	20,189	208.1	1,559.6	275.6	2,829.0		11.6
		1964	20,227	236.0	1,721.9	400.1	3,059.6	46.1	
		1965	21,989	271.9	1,944.5	454.7	3,431.8	67.3	14.9
271	Newspapers	1960	22,508	211.6	2,924.5				
		1963	23,089	240.7	3,201.9	317.7	4,483.6		*
		1964	23,327	258.6	3,460.8	339.3	4,820.4	1.8	
		1965	24,506	270.7	3,669.8	366.0	5,041.1	2.5	*

TABLE -3-

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
264	Paper and Paperboard Products	1960	20,061	192.4	1,650.0				
		1963	19,007	222.8	1,962.4	481.8	4,686.4		1.5
		1964	19,725	254.6	2,065.0	522.5	4,869.9	19.7	
		1965	19,670	264.6	2,325.6	567.6	5,340.3	19.2	3.2
202	Dairies	1960	17,306	170.6	3,164.9				
		1963	15,696	217.0	3,184.9	677.0	11,199.9		*
		1964	15,234	228.6	3,363.8	680.7	11,715.8	62.5	
		1965	16,387	248.8	3,309.9	727.4	11,573.5	73.0	*
306	Rubber Products, n.e.c.	1960	24,211	211.9	1,161.8				
		1963	21,162	229.3	1,427.0	431.8	2,598.0		17.7
		1964	20,435	235.3	1,518.5	434.5	2,733.2	6.3	
		1965	20,310	233.9	1,593.7	437.9	2,918.6	7.2	19.0
361	Electrical Distribution Products	1960	22,167	230.3	1,580.1				
		1963	16,299	200.3	1,534.7	n.a.	2,565.9		19.6
		1964	15,183	200.6	1,670.2	316.3	2,750.0	22.5	
		1965	16,004	228.2	1,895.6	348.5	3,083.5	33.5	22.1
307	Plastic Products, n.e.c.	1960	20,837	166.3	1,147.9				
		1963	21,869	191.7	1,660.9	356.4	3,165.4		6.9
		1964	22,407	203.3	1,853.5	363.8	3,505.4	50.0	
		1965	23,163	223.6	2,188.5	410.5	4,064.7	60.6	6.9
391	Jewelry and Silverware	1960	20,064	167.8	373.6				
		1963	19,254	170.5	415.7	297.5	857.9		5.3
		1964	19,687	152.8	426.9	300.2	922.5	149.2	
		1965	22,406	217.5	520.2	370.7	1,038.8	181.1	8.1
382	Mechanical Measuring Devices	1960	15,310	141.9	908.2				
		1963	17,262	190.0	1,111.6	283.3	1,670.8		30.4
		1964	17,385	199.8	1,167.3	297.1	1,767.7	8.4	
		1965	17,212	216.3	1,362.3	324.6	2,023.0	10.9	46.9
275	Commercial Printing	1960	21,774	157.7	2,641.5				
		1963	22,888	196.7	2,961.1	313.3	4,905.8		*
		1964	23,364	207.4	3,079.4	326.8	5,163.4	18.4	
		1965	25,545	214.7	3,303.6	346.5	5,553.3	17.4	*

TABLE 29

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
396	Costume Jewelry and Notions	1960	20,339	135.5	356.1				
		1963	19,592	152.4	414.8	245.6	760.0		9.8
		1964	19,057	160.4	451.2	272.3	802.6	96.7	
		1965	20,355	196.5	479.1	317.7	849.1	89.5	4.8
233	Women's and Misses' Outerwear	1960	32,744	141.3	2,015.3				
		1963	31,194	175.9	2,459.7	359.1	5,329.8		*
		1964	31,832	180.1	2,605.7	361.2	5,618.0	56.1	
		1965	31,192	190.9	2,545.6	366.5	5,567.6	68.1	*
205	Bakery Products	1960	n.a.	n.a.	2,902.1				
		1963	18,010	170.1	3,030.8	328.5	5,656.1		*
		1964	17,751	178.3	3,148.2	346.1	5,816.0	13.3	
		1965	17,483	175.0	3,182.6	339.2	5,949.7	14.2	*
345	Screw Machine Products, Bolts, etc.	1960	17,263	148.6	914.7				
		1963	14,500	140.1	1,054.2	218.7	1,807.2		2.1
		1964	14,449	150.9	1,130.6	236.4	1,980.6	35.0	
		1965	15,351	171.6	1,267.7	267.1	2,194.7	51.5	2.4
265	Paperboard Containers and Boxes	1960	17,326	143.9	1,660.5				
		1963	17,198	157.2	1,941.0	335.5	4,639.3		*
		1964	17,227	167.3	1,998.0	358.1	4,866.5	1.6	
		1965	17,798	170.1	2,136.5	366.6	5,174.9	1.3	*
357	Office Machines, n.e.c.	1960	18,390	160.7	1,294.8				
		1963	14,765	175.9	1,633.7	167.3	2,782.8		30.3
		1964	14,660	260.3	2,355.7	334.3	3,859.7	111.5	
		1965	15,668	166.2	2,808.4	270.5	4,310.1	144.7	60.1
229	Miscellaneous Textile Goods	1960	15,425	115.2	556.3				
		1963	14,976	133.3	620.0	130.3	1,681.5		*
		1964	14,618	133.6	638.8	311.1	1,771.0	373.6	
		1965	15,717	147.3	746.7	339.5	1,982.6	412.0	*
223	Weaving, Finishing Mills, Wool	1960	23,911	150.3	374.9				
		1963	20,754	149.0	386.6	355.5	1,010.7		*
		1964	18,658	144.1	371.9	341.0	1,026.5	81.3	
		1965	18,119	142.2	409.0	339.8	1,095.9	106.2	*

TABLE 29

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
394	Toys and Sporting Goods	1960	n.a.	n.a.	846.5				
		1963	13,443	122.9	978.5	192.8	1,826.8		9.1
		1964	13,374	119.9	1,016.0	210.0	1,905.6	121.6	
		1965	15,349	141.4	1,087.8	240.6	2,096.3	130.7	10.5
251	Household Furniture	1960	14,720	93.1	1,741.7				
		1963	15,506	114.3	2,047.5	222.4	4,035.4		*
		1964	15,991	122.5	2,148.8	233.4	4,344.1	.07	
		1965	16,124	124.5	2,399.5	252.3	4,696.5	.08	*
	Total, All Industries	1960	827,130	7,149.2	57,378.9				
		1963	851,397	8,389.8	68,102.0	13,920.4	130,013.3		653.4
		1964	837,968	8,777.1	72,579.7	15,799.8	137,795.0	2,062.9	
		1965	881,269	9,876.4	79,620.8	17,593.4	149,618.3	2,672.2	739.7

SOURCE: Federal Reserve Bank of Boston

4.4. Import Users in Greater Hartford

A smaller and differently oriented study by Professor Mark G. Bender,[30] the results of which were published early in 1968, is no more productive of aggregate data than the Federal Reserve efforts, but it does indicate some interesting and often contradictory attitudes on the part of New England business establishments which are involved one way or another with importing. Bender interrogated a sample of 150 firms randomly selected from the business population of Greater Hartford, Connecticut, of which about 100 were manufacturers. Of the total, eighty-six indicated that they were "involved with imports", and sixty-seven of these were import users. Of the import users, 40% were purchasing rarities or uniquities and stated that their demand for imports was not sensitive to price. Over half, however, stated that their imports consisted of standard items containing no unusual materials and requiring no scarce productive talents. Higher quality and/or lower cost, in comparison with U. S. items, were states as the reasons for purchase.

At the same time, paradoxically enough, a great majority of the users felt that the buying of imports rather than domestic products had no impact whatsoever on the ultimate prices set on their products. This may indicate one of two things; first, a sufficient degree of monopoly leverage in the market so that unit prices are so far above costs that prices and costs seem unrelated, or what may be part of the same condition, that these imported materials or components are an insignificant portion of overall unit cost. In any event, it seems difficult to reconcile this alleged lack of relationship between input cost and output pricing with the previously noted majority concern with price and quality.

One-third of Bender's import user respondents stated that access to imports enabled them to offer their customers a wider number of special lines through the purchase of items whose volume was noteworthy but insufficient to warrant local production. A very decisive majority, however (82%), felt that import access made a real contribution to their competitive posture. Again, it is difficult to see how these competition-conscious executives can also be the previously-cited majority who felt that imports had no effect upon their prices. They may, in the latter case, be referring to the fact that imports broadened their product lines or gave them unique or exotic qualities rather than to any advantage in price competition. It may be, too, that most of the respondents operate in markets where price competition is rare.

The Bender and Federal Reserve studies conclude, therefore, that imports are an important input to a broad cross-section of New England manufacturers, wholesalers and retailers. More specifically, the leading industry groups listed in Table 29, representing a majority of the New England industrial establishment, have a very specific interest in the unimpeded entry to the U. S. of the broad range of materials specified in Table 30.

4.5. Import Competition

The Federal Reserve study's basic conclusion regarding import competition is as follows:

> In general, the 32 industries included in this study do not experience much competition from imports. In the aggregate, competing imports into the U. S. account for less than 2% of the value of U. S. shipments of these industries.[31]

Ths industries referred to are those listed in Table 29.

Another relevant input is a U. S. Department of Commerce listing, for 1963, of major industries for which imports accounted for 15% or more of new supply coming onto the market.[32] Of the twenty-three industries (4-digit SIC) so categorized, only two (Paper Mill Products and Precious Metal Jewelry) constituted as much as 0.1% of New England's manufacturing employment. Two others whose average share of New England employment is only 0.03%, but which are relatively important in the parent U. S. industry (23% and 17% shares, respectively) were Non-Woven Carpets and Mats, and Cordage and Twine. In general, however, it would seem that the industries which faced this import challenge to incremental sales volume were not resident in New England at all at that time. In fairness, of course, we must repeat that the listing did not pretend to measure

TABLE 30

U. S. TARIFF REDUCTIONS ON IMPORTS WHICH ARE KEY INPUTS FOR MAJOR NEW ENGLAND MANUFACTURING INDUSTRIES[4]

Input		Simple Average U. S. Tariff (Ad Valorem Equivalent)			
		On All Imports		On Imports Dutiable Before Kennedy Round	
Commerce epartment Industry Number	Description	Tariff before Kennedy Round	Tariff after Kennedy Round	Tariff before Kennedy Round	Tariff after Kennedy Round
1	Livestock and Livestock Products	8.7%	5.7%	12.1%	7.8%
2	Other Agricultural Products	8.8	7.0	12.7	9.8
6	Nonferrous Metal Ores Mining	1.1	.5	7.2	3.5
13	Ordnance and Accessories	26.4	13.4	27.2	13.8
16	Broad & Narrow Fabrics, Yarn & Thread Mills	23.8	16.0	23.9	16.2
17	Miscellaneous Textile Goods and Floor Coverings	20.3	11.3	20.3	11.3
18	Apparel	24.4	17.4	24.4	17.4
20	Lumber & Wood Products, except Containers and Boxes	12.8	7.0	14.3	7.8
24	Paper and Allied Products, except Containers and Boxes	7.0	2.7	7.0	2.7
27	Chemicals and Selected Chemical Products	13.7	6.9	13.2	6.4
28	Plastics and Synthetic Materials	26.3	13.2	26.3	13.2
29	Drugs, Cleaning and Toilet Preparations	16.0	8.1	17.0	8.6
32	Rubber and Miscellaneous Plastics Products	13.3	9.8	17.4	12.8
33	Leather Tanning and Industrial Leather Products	9.9	5.1	10.7	5.5
34	Footwear and Other Leather Products	20.7	13.0	20.7	13.0
37	Primary Iron and Steel Manufacturing	8.2	5.8	9.7	6.5
38	Primary Nonferrous Metals Manufacturing	9.6	5.2	10.5	5.6
	Total, All Inputs	14.8	8.7	16.2	9.5

SOURCE: Federal Reserve Bank of Boston

the degree of import competition generally, but merely to identify those industries where imports had supplied this large percentage of additional sales. The general message is, however, that which many previous studies have developed; i. e., that the proportion of U. S. industry to which import competition is a serious threat is much smaller than that which derives benefit from unimpeded importation.

4.5.1. Import Competition in Greater Hartford

Bender's previously-cited study found that

> Of the 86 firms involved with imports, 19 were solely competitors while 16 were engaged both in using imports and competing with them.[33]

This sample of thirty-five competitors and user-competitors had a majority which agreed, strangely enough, with the previously cited opinions of those who were users exclusively, namely, that competitive imports had no detrimental effect upon employment levels or sales. Only seven respondents disagreed with this consensus and ascribed detrimental employment impact to imports. We probably may assume that these dissenters constituted 7/19 of the non-using competitors, although Bender does not specifically state this to be so.

At the same time, once again rather surprisingly, twenty-five of these thirty-five felt that imports constituted considerable price competition, leading them either to reduce prices or to avoid price increases. It would seem, therefore, that most import-competitive producers regard this competition as sufficient to exert some controlling influence on their prices, but not enough to cause layoffs or limit business growth. On another related matter, the group of thirty-five was about evenly divided between those who saw imports stimulating increased research and development activity and those who saw no import-related influences in this area.

The other (for our purposes) significant finding of the Bender study was that from this representative sampling of 152 establishments, sixty-six, or 40%, felt that they were not directly involved with imports at all as far as they could determine. This is important because one of the great unknowns in all attempts to appraise any region's international economic posture and policy interests has been the lack of any indication of the relative size of those industrial and commercial segments which are internationally uninvolved, except as their officers and employees may be import consumers. Such persons, presumably, can be added to the import users as part of the constituency which has a direct interest in freer trade. This constituency represents 87% of Bender's cross-section sample, without even considering whether or not any of the firms may be involved in exporting. The study, unfortunately, does not concern itself with export participation so that we cannot relate this propensity to his findings. One may be inclined to question, also, the validity of generalizing about New England from the Hartford sample. Industries in this area represent a higher degree of productivity and competitive competence than the Region's leading manufacturers overall, and this may make them somewhat less apprehensive about foreign competition.

Granting the above reservations, however, the fact that of the total sample, those firms representing 87% of sample employment and 81% of sales volume were directly involved with imports, and that of the total establishments involved only nineteen, or 12.5%, viewed imports solely as a competitive challenge, provides us with some estimates of these relative magnitudes which, tenuous though they may be, are superior to any data previously available. The fact, too, that the so-called "internationally-immune" establishments were the smaller ones (43% of the firms, 13% of employment) strongly suggests that size and international participation are directly correlated not only on the export side, but on the import side as well.

4.5.2. Federal Reserve Findings

Returning to the findings of the Federal Reserve Study, Fieleke found (Table 31) that only five of his major industry groups experienced a percentage of imports to total sales of over 5% in 1965 (Miscellaneous Textiles, 20.8%; Jewelry and Silverware, 17.4%; Costume Jewelry and Notions, 10.5%; Wool Weaving and Finishing Mills, 9.7%; and Toys and

Sporting Goods, 6.2%). These five industry groups among them accounted for 5.3% of the Region's value added by manufacture in 1965 (Table 29), and about 6% of manufacturing employment. The study's major conclusions regarding the degree of import competition and its consequences, with which we generally concur, are as follows:

1. Major New England industry groups suffering the most import competition are subject to more competition from within the U. S. than from without.
2. Those industries with higher rates of competing imports to shipments tend to produce a larger share of their output in New England than do the others.
3. Nine of the thirty-two industry groups in Table 29 experience competing imports in excess of their exports
4. The most import-competitive industries tended to grow somewhat more slowly than the exporters, but the overall differential (three percentage points, or about 10%) was not very great
5. Only a few New England industry groups experience substantial import competition, and these are a much smaller portion of the Region's employment and value added than industries with large exports.

A separate section of the Federal Reserve study deals with exports. Although the analysis is organized and oriented somewhat differently than our foregoing efforts in Chapter 3, the findings are not significantly different and will not be repeated here.

CHAPTER 5 - PROSPECTS AND RECOMMENDATIONS

5.1. Forecasting Frustrations

NERC's Regional Research Program has emphasized forecasts of the state of the New England Economy in the 1970's and 1980's. Such estimates are necessary benchmarks for economic planners in both the public and private sectors. Our problem is that since we cannot estimate our Region's present imports or exports with any reasonable degree of accuracy, nor any of the other possible measures of international regional involvement, it is obviously impossible to extrapolate for the purpose of creating future estimates. We can only venture some general estimates related to geographic areas and industry groups.

Geographically speaking, Massachusetts and Connecticut seem likely to maintain their dominant export positions, with Vermont and Rhode Island enjoying relative growth and Maine and New Hampshire on the decline. However, as noted earlier, statistics have been collected for so short a time that trend projection is most hazardous.

Industrially, among the traditional export leaders, Nonelectrical Machinery, Electrical Machinery and Instruments and Related Products have experienced the most consistent export growth in recent years. An industry which is not among the leaders but which has enjoyed exceptional export growth since 1960 is Lumber and Wood Products.

As for the Region overall, international trade is actually a by-product of economic growth and development generally. Much, indeed everything, depends on whether the industrial resurgence of the early 1960's can be continued and whether the gap between New England's economic growth and that of the Nation as a whole can be narrowed and closed. The Region's overall performance in international activities will probably reflect this broader development more than any specific developments in the international area.

5.2. New England and the Kennedy Round

The only recent developments which have yet uncompleted but nevertheless predictable consequences are the tariff reductions resulting from the Kennedy Round negotiations. Although the statistical manipulations required to forecast their probable impact are rather esoteric and conjectural, nevertheless the Federal Reserve study has attempted this, and we shall cite its major findings before making summary and concluding recommendations:

1. By 1972, tariffs on goods competing for markets with major New England industry groups will have been reduced about 41%, from an *ad valorem* level of 17% to 10% on the average.
2. Reductions of 50% or more are being made in the level of tariffs protecting eleven of the Region's thirty-two leading industry groups
3. Tariff reductions are about as large for industry groups facing strong import competition as for those having none at all

TABLE 31

MEASURES OF IMPORT AND DOMESTIC COMPETITION, EXPORT-DEPENDENCE, AND ONGOING TARIFF CHANGES OF INTEREST TO MAJOR NEW ENGLAND MANUFACTURING INDUSTRIES

Industry		Year	Value Added in N.E. as Percent of Value Added in U.S.	U.S. Imports as Percent of U.S. Shipments	N.E. Exports as Percent of N.E. Shipments	U.S. Exports as Percent of U.S. Shipments
SIC Code	Description					
(1)	(2)	(3)	(4)	(5)	(6)	(7)
372	Aircraft and Parts	1960	11.2			
		1963	10.9		11.8	
		1964	10.8	0.6		
		1965	12.3	1.1	8.1	9.8
366	Communication Equipment	1960	12.2			
		1963	10.6		5.7	
		1964	10.9	0.7		
		1965	10.8	1.0	3.7	3.5
354	Metalworking Machinery	1960	14.8			
		1963	14.0		15.8	
		1964	13.8	1.4		
		1965	14.5	1.8	8.4	7.8
367	Electronic Components	1960	16.8			
		1963	15.0		5.7	
		1964	14.1	1.5		
		1965	14.3	2.0	6.4	5.0
335	Nonferrous Rolling and Drawing	1960	17.0			
		1963	15.7		1.2	
		1964	17.0	1.7		
		1965	18.4	1.9	0.9	2.0
356	General Industrial Machinery	1960	14.8			
		1963	13.6		5.2	
		1964	11.7	2.2		
		1965	12.8	2.7	5.3	8.7

SIC Code	Simple Average U.S. Tariff (Ad Valorem Equivalent) on Directly Competing Imports (%)				Number of Foreign Countries Reducing at Least One Related Duty of Interest to the U.S. by 25% or More[2]	Number of Related Foreign Trade Categories (5-digit SITC's)[2,3]	
	On All Imports		On Imports Dutiable before Kennedy Round			Total	In which Some Related Duties of Interest to U.S. Are Being Reduced by 25% or More
	Tariff before Kennedy Round	Tariff after Kennedy Round	Tariff before Kennedy Round	Tariff after Kennedy Round			
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
372	9.4	4.7	9.4	4.7	4[A]	7	5
366	12.8	6.8	12.8	6.8	6[B]	10	6
354	16.0	7.3	16.6	7.6	9[AB]	13	10
367	14.3	6.9	14.3	6.9	7[AB]	8	7
335	18.5	9.6	18.6	9.7	3[B]	34	4
356	12.6	6.3	13.2	6.6	10[AB]	14	8

TABLE 31

(1)	(2)	(3)	(4)	(5)	(6)	(7)
314	Footwear, except Rubber	1960	33.6			
		1963	31.3		*	
		1964	31.7	3.5		
		1965	31.1	3.8	*	0.3
342	Cutlery, Hand Tools, Hardware	1960	20.2			
		1963	20.6		5.2	
		1964	19.6	2.1		
		1965	20.1	2.1	5.5	3.7
355	Special Industry Machinery	1960	18.7			
		1963	16.9		19.4	
		1964	16.0	3.7		
		1965	16.8	4.4	17.4	16.8
262	Paper Mills, except Building	1960	17.2			
		1963	18.7		3.6	
		1964	17.4	0.5		
		1965	18.5	0.5	3.7	3.0
373	Ship and Boat Building	1960	21.2			
		1963	20.9		0.6	
		1964	19.0	0.4		
		1965	20.0	0.5	1.5	2.1
284	Cleaning and Toilet Goods	1960	6.6			
		1963	7.4		1.4	
		1964	7.5	0.3		
		1965	8.3	0.3	1.8	2.0
364	Lighting and Wiring Devices	1960	15.9			
		1963	13.3		4.2	
		1964	13.7	1.5		
		1965	14.0	2.0	3.3	3.9
271	Newspapers	1960	7.2			
		1963	7.5		*	
		1964	7.5	0.04		
		1965	7.4	0.05	*	0.06
264	Paper and Paperboard Products	1960	11.7			
		1963	11.4		0.3	
		1964	12.3	0.4		
		1965	11.4	0.4	0.6	1.2

(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
314	14.6	9.4	14.6	9.4	*		
342	23.5	12.2	24.0	12.5	7^{AB}	12	4
355	14.8	7.7	15.9	8.2	12^{AB}	31	17
262	11.7	5.8	11.7	5.8	5^{AB}	6	3
373	10.9	5.4	10.9	5.4	0	4	0
284	15.1	7.4	15.1	7.4	1	9	1
364	20.1	11.7	20.1	11.7	5^{AB}	14	2
271	Free	Free	Free	Free	*		
264	12.4	6.6	12.7	6.8	2^{B}	10	1

TABLE 31

(1)	(2)	(3)	(4)	(5)	(6)	(7)
202	Dairies	1960	5.4			
		1963	6.8		*	
		1964	6.8	0.5		
		1965	7.5	0.6	*	1.7
306	Rubber Products, n.e.c.	1960	18.2			
		1963	16.1		4.1	
		1964	15.5	0.2		
		1965	14.7	0.2	4.3	3.0
361	Electrical Distribution Products	1960	14.6			
		1963	13.0		n.a.	
		1964	12.0	0.8		
		1965	12.0	1.1	6.3	7.0
307	Plastic Products, n.e.c.	1960	14.5			
		1963	11.5		1.9	
		1964	11.0	1.4		
		1965	10.2	1.5	1.7	1.8
391	Jewelry and Silverware	1960	44.9			
		1963	41.0		1.8	
		1964	35.8	16.2		
		1965	41.8	17.4	2.2	7.8
382	Mechanical Measuring Devices	1960	15.6			
		1963	17.1		10.7	
		1964	17.1	0.5		
		1965	15.9	0.5	14.4	10.8
275	Commercial Printing	1960	6.0			
		1963	6.6		*	
		1964	6.7	0.4		
		1965	6.5	0.3	*	1.0
396	Costume Jewelry and Notions	1960	38.0			
		1963	36.7		4.0	
		1964	35.6	12.0		
		1965	41.0	10.5	1.5	2.4
233	Women's and Misses' Outerwear	1960	7.0			
		1963	7.2		*	
		1964	6.9	1.0		
		1965	7.5	1.2	*	0.2

(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
202	15.3	13.2	15.8	13.6	*		
306	15.4	7.8	15.7	7.9	6^{AB}	12	4
361	17.8	10.5	17.8	10.5	7^{AB}	6	4
307	18.6	10.1	18.6	10.1	2^{B}	5	2
391	24.3	12.1	24.3	12.1	1	11	1
382	30.5	18.4	30.5	18.4	6	9	5
275	9.8	5.1	11.9	6.2	*		
396	27.4	16.2	29.0	17.2	3^{A}	9	2
233	31.0	26.5	31.0	26.5	*		

TABLE 31

(1)	(2)	(3)	(4)	(5)	(6)	(7)
205	Bakery Products	1960	n.a.			
		1963	5.6		*	
		1964	5.7	0.2		
		1965	5.5	0.2	*	0.1
345	Screw Machine Products, Bolts, etc.	1960	16.2			
		1963	13.3		1.0	
		1964	13.4	1.8		
		1965	13.5	2.4	0.9	1.7
265	Paperboard Containers and Boxes	1960	8.7			
		1963	8.1		*	
		1964	8.4	0.03		
		1965	8.0	0.02	*	0.4
357	Office Machines, n.e.c.	1960	12.4			
		1963	10.8		18.1	
		1964	11.0	2.9		
		1965	5.9	3.4	22.2	11.6
229	Miscellaneous Textile Goods	1960	20.7			
		1963	21.5		*	
		1964	20.9	21.1		
		1965	19.7	20.8	*	4.7
223	Weaving, Finishing Mills, Wool	1960	40.1			
		1963	38.5		*	
		1964	38.8	7.9		
		1965	34.8	9.7	*	0.2
394	Toys and Sporting Goods	1960	n.a.			
		1963	12.6		4.7	
		1964	11.8	6.4		
		1965	13.0	6.2	4.4	2.6
251	Household Furniture	1960	5.3			
		1963	5.6		*	
		1964	5.7	**		
		1965	5.2	**	*	0.5
	Total, All Industries	1960	12.5			
		1963	12.3		4.7	
		1964	12.1	1.5		
		1965	12.4	1.8	4.2	4.1

(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
205	2.2	1.0	6.5	3.0	*		
345	14.5	7.5	14.5	7.5	1	2	1
265	12.2	6.1	12.2	6.1	*		
357	11.0	5.8	12.2	6.5	9[AB]	15	6
229	22.3	14.1	23.5	14.8	*		
223	45.6	34.4	45.6	34.4	*		
394	19.0	10.1	19.5	10.4	4[AB]	9	3
251	20.0	15.0	20.0	15.0	*		
Total	17.0	10.0	17.5	10.3	14[C]	219[D]	75[D]

See footnotes at end of Table 31 SOURCE: Federal Reserve Bank of Boston

FOOTNOTES

[1] A manufacturing industry (defined at the 3-digit level of the Standard Industrial Classification) is considered of major importance to New England if in 1965 it added value of $200 million or more to manufacturing output or employed more than 15,000 persons.

[2] The word "related" means related to the corresponding SIC code in column 8. Duty reductions of interest to the U.S. are listed in Report on United States Negotiations, Volume I, U.S. Govt. Printing Office, Washington, D. C., 1967.

[3] A few 4-digit SITC's are included.

[4] A material input is considered "key" if it accounts for an estimated 5 percent or more of the value of all inputs in at least one industry deemed a major New England industry. The tariffs on the relatively few items (included in these inputs categories) which are manufactured by major New England industries are not included in the average tariffs given.

*Data were deemed insufficient to permit an estimate of exports.

**Less than .01 percent.

[A] Including the EEC.

[B] Including Canada.

[C] Excludes countries reducing duties just for industries for which no estimate could be made of New England exports.

[D] Excludes categories covering industries for which no estimate could be made of New England exports.

n.a.----not available.

Note: Shipments data are not available for 1960. Import data are not available in the desired form for 1960 or 1963.

4. Tariff reductions on major industry inputs are being reduced by 40% for eleven of the seventeen input groups, and the smallest reduction on any one is 20%
5. The average reduction on input items is identical with the average reduction on import-competitive items; i.e., 41%
6. The most significant major industry groups will experience a considerable reduction in effective protection, 1968-72, but in some (Table 31) the fact that tariffs on inputs will be reduced more than tariffs on outputs will result in an increase in _de facto_ protection
7. 75 of 219 commodity categories will experience foreign duty reductions of over 25% in the EEC and thirteen other foreign countries which buy large quantities of New England exports
8. New England's more export-oriented industry groups will find foreign tariff cuts deeper than the average in their export goods
9. The major industrialized customers of the U. S. overseas have not cut duties on their inputs sufficiently to offset the advantage which New England exporters will derive from their duty cuts on finished goods
10. Overall, foreign tariff reductions will provide considerable export potential for New England's manufacturers

5.3. Some Concluding Policy Considerations

The reader of the preceding pages may feel that our carefully considered advocacy of a New England policy position favoring freer trade and international competition is not sufficiently concerned with safeguards for those regional industries which may suffer from unfair competition or competition which, for some other reason, is not in the public interest. We have already, of course, indicated our concern for those who may be displaced by competition, foreign or domestic, (Sec. 4.5 & 4.1). As for undesirable forms of foreign competition, we would point out that ample protection is presently provided in Federal law, although we are in agreement with those who state that obtaining relief under the provisions stated below is by no means easy or automatic. In general, three kinds of relief are available:

(a) Antidumping Protection - although Congress is currently hung up on possible conflicts of law between the new Antidumping Convention recently negotiated under the Kennedy Round and the U. S. law (Title 19 U.S.C. Section 1303), under one or the other provision relief is and will be available for U. S. producers facing sporadic or predatory dumping (selling to the U. S. at prices less than posted prices abroad).

(b) Adjustment Assistance - first provided for under the Trade Expansion Act of 1962, and the U. S.-Canadian Automotive Free Trade Act of 1965, adjustment assistance is for firms which have been damaged by competition directly related to tariff reductions negotiated by the U. S. under one of the above acts.

(c) National Defense Essentiality - the Office of Emergency Planning is authorized to impose import quotas on behalf of industries which are threatened by foreign competition and which are also judged essential to national defense

We feel that these special provisions provide all of the special consideration which U. S., and New England, industry can reasonably expect. As for the afore-mentioned fact that compensation under any of these provisions is hard to obtain, we feel that this is as it should be. All of the circumstances provided for here are rather rare, and it is unfortunately true that most allegations about unfair competition are defensive justifications of the subject's failure to foresee new forms of competition over the forecast and planning horizon.

We recommend that NERC support all of the above programs as part of its more general support of the trade policy policy which the U. S. has followed for the last thirty years, and which is most recently manifested in the Trade Expansion Act of 1968.

5.3. SUMMARY OF FINDINGS AND RECOMMENDATIONS

WE FIND THAT:	AND RECOMMEND THAT NERC:
1. Except for exports of manufactures, virtually no data exist regarding the international economic involvement of the New England Region	1. Sponsor studies of the feasibility of closing this information gap by developing new statistical series and collection programs
2. The Region's export-oriented major industry groups earn better profits and pay higher wages than import-competitive industries	2. Emphasize regional economic policies which attract and retain capital- and technology-intensive industries
3. The Region's 850 exporting manufacturers employ one-third of New England's industrial workers, ranging from 50% in Connecticut to 15% in Maine	
4. Vermont leads the New England states in exports/dollar of value added by manufacture, followed by Connecticut, Massachusetts, Rhode Island, New Hampshire and Maine.	
5. The typical exporting manufacturer in New England is larger by far than the typical manufacturing establishment, but much smaller than his counterpart elsewhere in the U. S.	
6. Massachusetts and Connecticut dominate industrial exporting to about the same extent that they dominate regional manufacturing generally; i.e., a combined 80-85% share	
7. Transportation Equipment, Machinery and Instruments comprise 60% of the Region's manufactured exports	
8. New England's major industries experience little import competition, with only five of thirty-two groups having competitive imports exceeding 5% of sales	

	WE FIND THAT:		AND RECOMMEND THAT NERC:
9.	New England's exports of agricultural products are relatively insignificant, and that the Region derives little or no benefit from U. S. agricultural policies which restrict imports and raise prices		
10.	Major industries which experience substantial import competition account for a much smaller share of regional employment and value added than industries with large exports	10.	Weigh these relative quantities when taking policy positions
11.	Foreign tariff reductions under the Kennedy Round offer New England manufacturers considerable future additional export potential	11.	Oppose quota bills in Congress which, if passed, would provoke retaliation nullifying this potential
12.	Kennedy Round tariff reductions will significantly reduce input costs and effective protection for New England manufacturers	12.	Realize that these developments tend to be offsetting, with one increasing competitive capabilities and the other competitive pressure
13.	Government investment restrictions thwart the international outreach of New England industry without helping the balance of payments deficit	13.	Press for termination of these programs
14.	Public and private efforts in regional international business policy are incoherent and uncoordinated	14.	Sponsor the merger of State Port Authorities, Foreign Trade Promotion Offices, and various private organizations into a Regional International Business Authority
15.	The Region's future comparative advantage lies more and more in scientific and professional services	15.	Sponsor feasibility studies for a Regional Economic Data Bank to enhance the effectiveness of the service sector

FOOTNOTES

1. This is the Ames Bill, which would impose an addditional "Buy American" stricture on the Massachusetts government with regard to steel products and other building materials. Legal authorities are in dispute as to its probable constitutionality.

2. New England Regional Commission, Comprehensive Planning Study (Boston, 1967), Mimeo, p. 1

3. Ashton, D. J., New England Manufacturers Export Practice and Potential (Boston: Federal Reserve Bank of Boston, 1960), page 1

4. U. S. Bureau of the Census, Survey of the Origin of Exports of Manufactured Products, 1966 (Washington: U. S. Government Printing Office, 1967), Current Industrial Reports Series MA-161 (66)-1, 55 pp., is the latest to be issued.

5. Implications and consequences of this are discussed in detail in Ashton, D. J., The Meaning of Export Origin (Boston: Federal Reserve Bank of Boston, 1960), 173 pp., which also contains an extensive bibliography of regional economic materials as of that date. The most recent comprehensive source of materials dealing with New England's economy generally, and its international economic relations in particular is U. S. Department of Commerce, Economic Development Administration, Review of Regional Economic Research and Planning on New England (Washington: U. S. Government Printing Office, 1967). Part C is a 34-page bibliography on international economic relations, edited by Professor Meredith O. Clement of Dartmouth.

6. As, for example, in U. S. Department of Commerce, Exports from Connecticut, 1966 (Washington: U. S. Government Printing Office, 1968), p. 7

7. The Meaning of Export Origin, pp. 18-28

8. Nourse, H. O., Regional Economics, (New York: McGraw-Hill, 1968), p. 146

9. Ibid., p. 153

10. Zimmermann, E. W., World Resources and Industries (New York: Harper & Bros., 1951), p. 81 et seq. Professor Zimmermann's unusual approach to comparative advantage seems particularly apt here, although this does not imply that the traditional Ricardo-Heckscher-Ohlin amalgam would not serve as well.

11. p. 31

12. New England Manufacturers etc., p. 31. Although the primary data supporting this research are now ten years old, occasional studies since that time have tended to confirm its general findings and they are included herewith as Appendix B.

13. Ibid, p. 52

14. Ashton, D. J., The Origin of U. S. Exports of Manufactures By State, Region, and Metropolitan Area (Washington, 1962), p. 93, unpublished study prepared for U. S. Department of Commerce.

15. Securities and Exchange Commission, Quarterly Report of Manufacturing Corporations, December 1967

16. U. S. Department of Labor, Employment and Earnings and Monthly Report on the Labor Force (Washington: U. S. Government Printing Office, 1968), Vol. 14, No. 11, May 1968, p. 86

17. New England Economic Almanac (Boston, Federal Reserve Bank of Boston, 1966), p. 6

18. New England Manufacturing Employment, 1947-66, a table prepared by Arthur D, Little, Inc., from various publications of the U. S. Department of Labor

19. Bureau of the Census, Census of Manufactures, 1958 & 1963, Volume III, Area Statistics

20. Ibid.

21. Export Origin Survey, 1966, p. 1, footnote

22. Export Origin Survey, 1960

23. For example, an earlier survey by the author saw seventy-six inquiries to the Woolen and Worsted, and Yarn and Thread groups in New England produce exactly one response, even after a personal follow-up letter, whereas the survey obtained from the manufacturing community overall a 20% response from a first mailing.

24. New England Manufacturers etc., p. 13

25. This is the central message of *The American Challenge*, originally published in Europe and recently translated into English

26. *New England Economic Almanac*, pp. 11-12

27. U. S. Department of Commerce, *Exports from Maine, 1966* (Washington: U. S. Government Printing Office, 1968), p. 3

28. pp. 94-96 of this study

29. Fieleke, Norman S, "New England Manufacturing and the Kennedy Round", *New England Business Review*, February 1968, pp. 2-12. The Bank also offers a supporting statistical supplement, most of which we have included here as our Tables 29-31.

30. Bender, Mark G, "The Impact of Imports on a Regional Economy", *New England Business Review*, February 1968, pp. 11-13

31. Fieleke, *Op. Cit.*, p. 4

32. A special listing supplied to the author by Frances L. Hall, Director, International Trade Analysis Division, U. S. Department of Commerce, Washington, D. C.

33. Bender, *Op. Cit.*, p. 13

APPENDIX A - New England Manufacturing Establishments Which Export, By State and Exported Products

1968

MAINE

BATH
Bath Iron Works Corp., Crushing Machinery

BRUNSWICK
Pejebscot Paper Division of Hearst Consolidated Publications Inc.
Paper

DEXTER
Fayscott Landis Machine Corp., Textile Machinery

FRAMINGTON
Forster Mfg. Co., Assorted Wood Products

LEWISTON
Raytheon Co., Electrical Parts and Components

LINCOLN
Eastern Fine Paper and Pulp Div. of Standard Packaging Corp.,
Pulp

LISBON FALLS
U. S. Gypsum Co., Gypsum Wallboard and Plaster

MADAWASKA
Fraser Paper Ltd., High Grade Specialty Paper

OAKLAND
Berest-Forest-Dixiefield Co., Assorted Wood Products

OLD TOWN
Old Town Co., Paper and Pulp Plates

OLD TOWN
Lily-Tulip Cup Corp., Paper and Pulp Plates

PORTLAND
American Can Co., Canco Division Paperboard Containers
Southworth Machine Co., Paper Industry Machinery

PINE POINT
Snow Canning Division of The Borden Co., Shellfish Items

PRESQUE ISLE
Lockwood Grader Corp., Agricultural Machinery

WALDOBORO
Sylvania Electric Products Inc., Current Carrying Wiring Devices

WESTBROOK
Weyerhaeuser Co., Shipping Containers

WINSLOW
Scott Paper Co., Paper Towels, Tissues

NEW HAMPSHIRE

CLAREMONT
Joy Mfg. Co., Mining Equipment

DOVER
Crescent Petroleum Corp., Eastern Air Devices Inc., Motors and Generators

FRANKLIN
G. W. Griffin Co., Hacksaw and Bandsaw Blades
J. P. Stevens and Co., Textile Mill Products

HILLSBORO
Sylvania Electric Products Inc., Semiconductor Div., Electronic Components

HOPKINTON
Kingsbury-Davis Machinery Co., Division of FMC - Paper Box Machinery

JAFFREY
D. D. Bean and Sons Co., Book Matches

LACONIA
New Hampshire Ball Bearings Inc., Ball Bearings

LEBANON
E. Cummings Leather Co., Inc., Leather
Miniature Precision Bearings Inc., Ball Bearings

MILFORD
The O. K. Tool Co., Inc., Metal Cutting Tools

NASHUA
Bemis Brothers Bag Co., Paper Bags
Improved Machinery Inc., Paper Making Machinery
Sanders Associates Inc., Gyros, Cables, Hydraulic Values

NEWFIELDS
Warren Mfg. Co., Automobile door glass run Channels

NEWMARKET
The Macallen Co., Mica sheet products

NORTH STRATFORD
The Brown Co., Woodpulp

PETERBOROUGH
New Hampshire Ball Bearings Inc., Ball Bearings

ROCHESTER
Spaulding Fibre Co., Inc., Fibre and Transformer Board

VERMONT

BARRE
Rock of Ages Corp., Granite

BENNINGTON
Transistor Electronics Inc., Electrolytic Capacitors

BRATTLEBORO
American Optical Co., Optical products

BURLINGTON
Penick and Ford Ltd., Syrup and sugar
Blodgett, G. S. Co., Inc., Commercial gas stoves and ovens

DERBY LINE
Union Twist Drill Co., Metal cutting tools

PROCTOR
Callahan Can Machine Co., Can making and closing machines

RICHFORD
H. K. Webster Co., Feed for animals and fowl

ST. ALBANS
Fonda Container Co., Paper plates

SOUTH SHAFTSBURY
Eagle Square Mfg. Co., Cutlery, hand tools

SPRINGFIELD
Bryant Chucking Grinder Co., (Ex-Cello Corp.) Machine tools
The Fellows Gear Shaper Co., Gear machinery
Jones and Lamson Machine Co., Lathes, grinders

WALLINGFORD
True Temper Corp., Handles for agriculture tools

WINDSOR
Cone Automatic Machine Co., Inc., Screw and chucking machines

MASSACHUSETTS

ADAMS
Hooker Chemical Co., Chemicals, plastics

AMESBURY
The Bailey Co., Inc., Auto glass run channels

ANDOVER
Raytheon Co., Missile Systems Division, Guided missiles

ASHLAND
Fenwal Inc., Temperature control, detection, and measuring devices

ATHOL
L. S. Starrett Co., Precision tools

ATTLEBORO
L. G. Balfour Co., College and High School class rings
Englehard Industries, Inc., D. E. Makepeace Division
Rolled gold and contact parts
Swank Inc.. Men's jewelry
Texas Instruments, Inc., Metals and Controls Division
Motor protectors and relays

BOSTON
Andiovox Inc., Hearing aids and accessories
The Gillette Safety Razor Co., Razors, Blades, Shaving cream, toiletries
Keystone Camera Co., Home Movie Cameras

BRIDGEWATER
George O. Jenkins Co., Leather fibre heeling board

BURLINGTON
Jerguson Gage and Valve Co., Gages and valves for observation of liquids and levels

CAMBRIDGE
Baird-Atomic, Inc., Electronic instruments
Blanchard Machine Co., Surface-grinding machines
Boston Woven Hose and Rubber Co., Rubber hose and industrial rubber goods
Cambridge Thermionic Corp., Electronic components and accessories
Deran Confectionery Co., Inc., Candy and confectionery products
Houghton Mifflin Co., The Riverside Press, Books
Myerson Tooth Corp., Artificial Teeth
F. S. Payne Co., Elevator parts and accessories
Polaroid Corp., Photographic products

CHELSEA
American Biltrite Rubber Co., Inc., Heels and soles

CHICOPEE FALLS
Uniroyal Co., Casings and tubes

MASSACHUSETTS

CLINTON
The Electric Storage Battery Co., Flashlights

DANVERS
Creese and Cook Co., Leather in original tannery shapes

DIGHTON
Arnold Hoffman and Co., Inc., Chemicals

DORCHESTER
Sturtevant Mill Co., Grinding and crushing equipment

EASTHAMPTON
Easthampton Rubber Thread Co., Rubber thread
Stanley Home Products Inc., Household brushes and chemicals

EAST BRIDGEWATER
The Murray Company of Texas Inc., Carver Division, Agricultural machinery

EAST LONGMEADOW
Package Machinery Co., Packaging machinery

EAST WALPOLE
Bird and Son Inc., Paper boxes and cartons, asphalt base floor coverings

ERVING
Erving Paper Mills, Wrapping tissue, special industrial paper

EVERETT
Kyanize Paints Inc., Paints and varnishes
Manton-Faulin Mfg. Co., Inc., high pressure pumps for dairy and chemical industry
Standard Duplicating Machines, Duplicating machines, envelope sealers

FAIRHAVEN
Atlas Tack Corp., Tacks, nails, rivets, eyelets

FALL RIVER
The Firestone Tire and Rubber Co., Fabricated rubber products
Globe Manufacturing Co., Bare rubber thread

FITCHBURG
Parks-Cramer Co., Textile humidification and air-conditioning equipment
Siminds Saw and Steel Co., Saws and saw blades

GARDNER
Simplex Time Recorder Co., Time systems

GRAFTON
Wyman-Gordon Co., Closed die forgings

GRANITEVILLE
- C. G. Sargent's Sons Corp., Textile machinery

GREENFIELD
- Millers Falls Co., Hardware, Hand tools
- United Greenfield Corp., Greenfield Tap and Die Division, Taps, dies, drills

HINGHAM
- Massa Division of Dynamic Corporation of America, High speed recording systems

HOLDEN
- Reed Rubber Thread Die Co., Subsidiary of Union Twist Drill Co., Perishable tools and machine tools

HOLYOKE
- B. F. Perkins and Sons, Paper and textile finishing equipment

HUBBARDSTON
- Wain-Roy Corporation, Farm machinery

HUDSON
- Lapointe Machine Tool Co., Broaching machines and tools

IPSWICH
- Sylvania Electric Products Inc., Electrical industrial apparatus

LAWRENCE
- Bolton, Emerson Inc., Machine knives, paper mill equipment
- Craig Systems, Inc., Communications equipment

LEE
- Kimberly-Clark Corporation, P. J. Schweitzer Division, Paper mill products

LEOMINSTER
- Star Mfg. Co., Infant toys, combs

MALDEN
- Continental Can Co., Metal cans paper products

MAYNARD
- H. H. Scott Inc., Radio and television equipment

MIDDLEBORO
- Winthrop-Atkins Co., Inc., Photographic mountings

MILLERS FALLS
- Millers Falls Paper Co., Paper mill products

NEEDHAM
- Sylvania Electric Products Co., Computing and accounting machines

MASSACHUSETTS

NEW BEDFORD

Acushnet Process Co., Golf equipment, rubber products
Morse Twist Drill and Machine Co., Part of Van Norman Machine Co., High speed cutting tools

NEWBURYPORT

The Chase Shawmut Co., Subsidiary of I-T-E Circuit Breaker Co., Switch gear and switch board apparatus

NEWTON

Raytheon Co., Industrial Components Division, Industrial electron tubes

NEWTON HIGHLANDS

NRC Equipment Corp., Subsidiary of National Research Corp., Pumps, gages, furnaces
National Research Corp., Metals Division, ingots and mill products

NEWTON UPPER FALLS

The Famewell Co., Subsidiary of E. W. Bliss Co., Signal products

NORTHAMPTON

Kollmorgen Corp., Special cameras for nuclear energy work

NORTH ANDOVER

Western Electric Co., Communications equipment

NORTH DIGHTON

Raytheon Co., Equipment Division, Data processing equipment

ORANGE

Rodney Hunt Machine Co., Textile machinery

PEMBROKE

Thayer Scale Corp., Weighing systems

QUINCY

The Procter and Gamble Mfg. Co., Soap and detergents
Raytheon Co., Industrial Components Division, Cathode ray picture tubes

ROCKLAND

F. L. and J. C. Codman Co., Buffing and polishing wheels

SALEM

Sylvania Electric Products Inc., Lighting Products Division - electric lamps

SOMERVILLE

H. K. Porter Inc., Mechanics hand tools

SOUTH BOSTON

Cole-Hersee Co., Low voltage electrical equipment

MASSACHUSETTS

SOUTH BRAINTREE
Abrasive Products Inc., Coated abrasives

SPRINGFIELD
Smith and Wesson Inc., Pistols, revolvers
The Standard Electric Time Co., Electric clocks and signaling systems
Van Norman Machine Co., Machine tools

TURNERS FALLS
Esleeck Manufacturing Co., Rag content writing paper

WALTHAM
New England Mica Co., Inc., Nonmetalic mineral products
W. H. Nichols Co., Machine tools
Raytheon Co., Microwave and Power Tube Division, Special purpose electron tubes
Reece Corp., Industrial Sewing Machines
Sanborn Co., Subsidiary of Hewlett-Packard Co., Medical and diagnostic apparatus
Sylvania Electric Products Inc., Radio and Television Equipment
J. C. Thompson Rivet and Machine Co., Rivet setting machinery, rivets
Tracerlab, Nuclear equipment for medical, industrial purposes

WATERTOWN
United Electric Controls Co., Temperature, pressure and vacuum controls

WAYLAND
Raytheon Co., Equipment Division, Electronic search and detection apparatus
Waters Manufacturing Inc., Measuring devices for low torque valves

WEST CONCORD
General Radio Co., Electrical test equipment

WESTFIELD
Savage Arms Corp., Small arms

WEST SPRINGFIELD
Perkins Machine and Gear Co., Gears

WHITINSVILLE
Whitin Machine Works, Textile Machinery

WOBURN
Sylvania Electric Products Inc., Semiconductor Division, Electronic Components

WORCESTER
Coppus Engineering Corp., Steam turbines, industrial blowers
Crompton and Knowles Corp., Textile machinery
Jamesbury Corp., Double seal valves and hydraulic operators

MASSACHUSETTS

WORCESTER (continued)

Leland-Gifford Co., Machine tools
Mutual Products Co., Paper punches
Rockwell Sprinkler Co., Subsidiary of E. W. Bliss Co., Fire protective equipment
The Washburn Co., Consumer wire goods
Wyman-Gordon Co., Closed die forgings

WRENTHAM

Crosby Valve and Gage Co., Safety and Relief valves gages

RHODE ISLAND

ASHTON
Owens-Corning Fibreglas Corp., Continuous and staple yarns

BRISTOL
Carr Mfg. Corp., Elastic rubber thread
Kaiser Aluminum and Chemical Corp., Insulated nonferrous metal wire

CENTRAL FALLS
Corning Glass Works., Bulbs and tubing

CRANSTON
Taco Inc., Pumps, heat transfer equipment

EAST GREENWICH
Bostich, Div. of Textron, Inc., Staples and Staplers

PAWTUCKET
E. A. Adams and Son Inc., Metal jewelers findings
Crescent Co., Inc., Battery and ignition cables
Fram Corp., oil air water filters , East Providence
Hassenfeld Bros., Inc., Educational toys, Central Falls

PEACEDALE
Warren Pumps, Inc., Pumps

PROVIDENCE
Anson Inc., Jewelry, leather goods
Blacker Bros, Inc., Metal bag frames
Coro, Inc., Jewelry, plastics
Imperial Knife Co., Pocket and kitchen knives
Kestenman Bros. Mfg. Co., Precious metal jewelry
Uniroyal Inc., Mechanical and rubber products

RUMFORD
Rumford Chemical Works, Baking powder

SLATERSVILLE
Amperex Electronic Corp., Semi conductors

WEST BARRINGTON
Pilling Chain Co., Slide fastener components

WEST WARWICK
Hoechst Chemical Corp., Dyestuffs

WOONSOCKET
Falls Yarn Mills, Textile mill products
The Taft-Pierce Mfg. Co., Machine tools gages, hand tools

CONNECTICUT

ANSONIA
Farrel-Cord Inc., Machine tools

BLOOMFIELD
The J. M. Ney Co., Dental precious metals, laboratory supplies and equipment; precious metals for electrical and electronic applications
The Smyth Manufacturing Co., Machinery for the manufacture of hardbound books

BRIDGEPORT
Bead Chain Manufacturing Co., Bead type chains and accessories, small tubular electronic parts
The Bassick Co., Miscellaneous metal products (hardware)
Bridgeport Hardware Manufacturing Corp., Power driven metal cutting machine tools
Bridgeport Machines Inc., Metalcutting machine tools
General Electric Co., Power cables, fans, lighting components
Harvey Hubbell, Inc., Electrical wiring devices
McKesson Laboratories, Pharmaceutical and cosmetic supplies
Moore Special Tool Co., Inc., Machine tools
Sprague Meter Co., Mechanical measuring and controlling instruments

BROAD BROOK
United Aircraft Corp. (Hamilton Standard Division), Electronics products

CHESHIRE
Waterbury Farrel Co., Rolling mill machinery

DANBURY
American Cyanamid Co., Davis and Geck Division, Surgical appliances and supplies
The Barden Corporation, Barden precision ball bearings
Heli-Coil Corp., Bolts, nuts, screws, rivets, and washers
Risdon Manufacturing Co., Lipsticks, lipstick components, aerosol valves and valve components

DAYVILLE
William Prym, Inc., Needles, pins, hooks, and eyes

DERBY
The W. E. Bassett Co., Manicure implements

EAST HARTFORD
United Aircraft Corp. (Pratt & Whitney Division), Aircraft engines

CONNECTICUT (continued)

EAST KILLINGLY

Acme Cotton Products

FAIRFIELD

Electric Storage Battery Co., Wet storage batteries
Handy & Harman, Manufacturing and refining of precious metals
W. S. Rockwell Co., Industrial valves, industrial furnaces and ovens, and special machinery

FORESTVILLE

Wallace Barnes Steel Division (Associated Spring Corp.), Fabricated wire products

GLENBROOK

Laminated Shim Co., Inc., Light metal stampings and packaged metal stock

GROTON

General Dynamics Corp. (Electric Boat Division), Nautical and navigational instruments

HAMDEN

The High Standard Manufacturing Co., Shotguns, .22 caliber rifles, high power rifles, .22 caliber pistols, .22 caliber revolvers, and deep-hold gun drills

HARTFORD

Arrow-Hart & Hegeman Electric Co., Electric Wiring devices and controls
Capewell Manufacturing Co., Cutting saws and tools
Cushman Chuck Co., Lathe chucks
Hart Manufacturing Co., Switches, thermostats, and relays
Merrow Machine Co., Industrial sewing machines and parts
Olivette Underwood Corporation, Manual and electric typewriters
Royal McBee Corporation, Typewriters and parts
Spencer Turbine Co., Steam turbines and related spare parts
M. Swift & Sons Inc., Hot die stamping foils
Terry Steam Burbine Co., Steam turbines and related spare parts

MANCHESTER

Iona Manufacturing Co., Electric can openers, blenders, and hand mixers
Rogers Corporation, Printing plate matrix, thermosetting plastics molding materials, and high temperature plastics laminates

MERIDEN

The International Silver Co., Silverware

MIDDLETOWN

Eis Automotive Corp., Automotive brake parts, fluid, and cables
Mastercraft Trailer Corp., Boat trailers and related accessories
Russell Manufacturing Co., Engineered fabrics

MILFORD

U. S. Electrical Motors Inc., Integral rated induction electric motors

CONNECTICUT (continued)

MILLDALE

Alsop Engineering Corporation, Filters, filter discs and sheets, mixers, agitators, and pumps and tanks

MYSTIC

Crompton & Knowles Corp., (Davis Standard Division), Mining machinery and equipment

NAUGATUCK

Lewis Engineering Co., Temperature-measuring instruments, resistance bulbs and insulated wire

U. S. Ruber International, Waterproof and canvas footwear, rug underlay

NEW BRITAIN

Fafnir Bearing Co., Ball bearings

Landers, Frary & Clark, Electric housewares and fans

New Britain Machine Co., Machine tools and hand tools

North & Judd Manufacturing Co., Saddlery hardware

Stanley Works, Builder's hardware, steel strappings, power-driven hand tools, cutlery, hand tools, files, and saws

NEW HAVEN

Berger Brothers Co., Surgical supports

Connecticut Coke Co., Coke

A. C. Gilbert Co., Toys

Marlin Firearms Co., Sporting guns, rifles, and shotguns

MB Electronics, Electric measuring instruments and test equipment

O. F. Mossberg & Sons, Inc., Firearms

Seamless Rubber Co., Rubber products

Henry G. Thompson & Son Co., Metal cutting hacksaw blades, metal cutting bandsaw blades

United Greenfield Corp. (Geometric Tool Division), Automatic self-opening die heads, and automatic collapsible tap heads and cutters

NORTH HAVEN

Soundscriber Corporation, Dictation equipment and recording equipment

NORWALK

Perkins-Elmer Corporation, Chemical analytical instruments, electro-optical equipment, and electrical and optical components

United Aircraft Corporation (Norden Division), Electronic equipment

PEQUABUCK

Cooper Thermometer Co., Thermometers

PLAINVILLE

Kalart Co., Inc., Movie-editing equipment

ROGERS

Rogers Corp., Electrical insulating papers and boards, gasketing and packing materials

SOUTH NORWALK

Sperry Rand Corp. (Semiconductor Division), Semiconductors

CONNECTICUT (continued)

STAMFORD
Globe Slicing Machine Co., Inc., Feed slicers, scales, and choppers
Pitney-Bowes Inc., Postage meters, mailing machines, letter openers, folding machines, inserting machines, and scales

STRATFORD
Manning Maxwell & Moore, Valves, industrial process instruments
Raybestos-Manhattan Inc., Asbestos and sintered metal friction materials
United Aircraft Corp. (Sikorsky Aircraft Division), Helicopters

THOMASTON
Hallden Machine Co., Shearing machines

TORRINGTON
The Torrington Co., Machine needles

UNCASVILLE
Continental Can Co., Inc., paperboard

WALLINGFORD
American Cyanamid Co., Synthetic resins
Stanley Judd, Division of Stanley Works, Curtain fixtures and accessories
Times Wire & Cable Co., Coaxial cables
Wallace Silversmiths, Inc., Silvdr flatware and holloware
Wallingford Steel Co., Cold rolled sheet, strips and bars

WATERBURY
Anaconda American Brass Co., Copper and brass products
Chase Brass and Copper Co., Inc., Rolled, drawn, and extruded copper
Chrominum Corp. of America, Electroplating
Precision Methods & Machines (Division of Textron), Metalworking machinery
Scovill Manufacturing Co., Miniature, sensitive relays and solenoid
Waterbury Buckle Co., Needles, pins, hooks and eyes

WEST HARTFORD
Dunham-Bush, Inc., Compressors and condensing units
Whitlock Manufacturing Co., Air heaters, chlorine vaporizers, coolers, tanks, steam condensers, superheaters, and heaters

WILLIMANTIC
The Electro Motive Manufacturing Co., Capacitors

WINDSOR LOCKS
C. H. Dexter & Sons, Inc., Filter papers
Montgomery Co., Bare tinsel conductors
United Aircraft Corporation (Hamilton Standard Division), Propellers and other aeronautical equipment

APPENDIX B - NEW ENGLAND MANUFACTURERS EXPORT PRACTICE AND POTENTIAL, 1960

General Summary of Findings

1. New England's leading industry groups, by and large, are not leading national exporters, although the nation's export leaders produce an important segment of the region's value added by manufacture.
2. Those industries in which New England's relative national standing is highest are not leading exporters, nor are they the region's leading industry groups.
3. Each New England state except Rhode Island derives more than 25% of its value added from the nation's forty leading export industries, with a regional percentage of 32.7%. This compares with 32.3% for the Middle Atlantic Region and 51.8% for the East North Central Region.
4. Massachusetts and Connecticut averaged 83% of the exports reported for the three years, 1954, 1957, and 1958 which totalled $67 million, $105 million and $87 million, respectively. Of the plants interrogated and responding, the highest percentage of exporters was from Connecticut (61%) and the lowest from Maine (27%).
5. New England's exports of manufacturers apparently fluctuated more than did U. S. exports as a whole, 1954-1958.
6. Machinery exports dominate the regional totals, along with electrical and electronic manufactures, measuring and control instruments, transportation equipment and fabricated metal products such as hardware.
7. It does not seem possible to forecast accurately each state's or even the region's relative export originations by deductive methods based on regional residence of nationally important export industries.
8. Within any industry group, larger plants showed by far the greatest export propensity. Moreover, as exports/plant increased, there was an accompanying increase in the ratio of the plant's exports to

total sales. In other words, larger plants not only exported the most; they also had the largest percentages of sales in the form of exports.

9. Plant size is probably more important in determining the export ranking by industry group within the region or state than either the industry's national export standing or the standing or the industry in the region or state.

10. Most firms were quite consistent in their export activity, showing little evidence of the oft-decried practice of using exporting on an erratic basis as a means of dumping unsalable surplus.

11. Over 75% of New England's exporters make no significant attempt to adapt their products to foreign markets and tastes. There is some evidence, not conclusive, that the middle-sized firms (exports between $25,000 and $1 million annually) which do adapt their products for foreign markets enjoy a significantly larger percentage of export sales than those which do not.

12. New England exporters, even those of capital goods, do not generally extend credit terms of over six months. Ninety-three percent reported that they never extended such terms and, of these, nearly half (77 out of 158) said that they had never been asked to do so. No indication was given that the matter of export credit was of particular concern to exporters as a whole.

13. Although 37% of the exporters said that they made some use of the facilities of the Port of Boston, evidence indicates that the Port of New York gets about 85% of New England's exports, including over 80% of those from plants located nearer to Boston. Of 55 Massachusetts and Rhode Island plants which made no use at all of Boston, 40 were within 40 miles of the port.

14. Customer preference, frequency of sailings, and the use of New York forwarding services were most frequently mentioned as reasons for preferring the Port of New York over Boston.

15. Foreign competition was most frequently given as the reason why potential exporters were not so engaged, but a surprising number reported that they were not interested, had not considered it, or had not had foreign requests for quotation indicating something less than an agressive exploration of the possibilities.

M51 N

New England Regional Commission.

AUTHOR

Expanding the Region's

TITLE

n

BOSTON
PUBLIC
LIBRARY